IOWA SCHOOL SUPERINTENDENTS' PERCEPTIONS OF THE GENERAL EFFECTS OF PHASE III PLANS

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by Earl Marvin Dick
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Approved by Committee:

Michael Johnson

Richard Schwab

James Cox

Richard Schwab
Dean of the School of Education

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The Problem

Many reports calling for educational reform have included recommendations for performance-based or incentive pay as a method for improving teacher performance. In Iowa, legislation has incorporated both performance-based pay and incentive pay for teachers into the state's Phase III program. The intent of Phase III is to improve teacher performance through financial rewards for teachers who exhibit superior performance or who assume extra tasks. This study examines Iowa public school superintendents' perceptions of the effects of Phase III plans and, specifically, if superintendents believe that Phase III has impacted teacher performance.

Procedures

To determine superintendent perceptions, the researcher developed the Superintendent Perceptions of Phase III Survey. After a pilot study, the survey was mailed to 200 Iowa superintendents. A total of 177 surveys (88.5 percent) were returned. Frequency distribution analysis and an ANOVA were utilized to analyze the data.

Findings

Superintendents perceived the greatest positive effects of the Phase III program in the areas of staff development, school/district development, decision-making, and instruction. The least positive effect was perceived for student achievement. Superintendents did not believe that Phase III plans that contain performance-based pay have any greater effect than plans that do not contain performance-based pay. No differences were noted in perceptions of superintendents when analyzed according to district size and according to the type of Phase III plan in the superintendents' school districts.

Conclusions

Iowa superintendents generally perceive that Phase III plans have had a positive effect upon education. However, during a time when the public and the business community are proposing performance-based pay as a method of improving instruction, superintendents did not believe that plans that include performance-based pay are more effective than plans without performance-based pay.

Recommendations

Several areas for future study seem indicated, including studies of teacher and principal perceptions of the effects of Phase III and studies of student achievement since the adoption of Phase III. Additional studies of incentive pay may also be needed.

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CHAPTER 1

Introduction

Background of the Problem

In 1983, eight nationally significant reports and dozens of reports with a more narrow state, local, or subject matter focus were published. A Nation at Risk received the most public and political attention (Spady & Marx, 1984). Since A Nation at Risk was published, several dozen major reform reports were published that agree that the American educational system fails to provide the quality of education needed by today's students (Cross, 1987).

In response to these reform reports, American educators have been involved in the search for new ways to improve the quality of education in the schools of the United States. Weaknesses in education are being identified and paths to recapture a commitment to quality are being mapped (Carnegie, 1986). According to Cross (1987), it is equally important to identify positive aspects of American schools, as well as problems or weaknesses, so that positive educational practices can be rewarded and encouraged.

The Carnegie report states that America is in a trap of its own making. A serious functional literacy problem exists that must be corrected. Not all children master the basic skills. During the last few years, while many schools have shown some gains in standardized test scores, too many students are deficient in the ability to reason and perform complex, non-routine, intellectual tasks

(Carnegie, 1986). On a personal level, students, parents, and teachers perceive that a basic promise is not being kept. More young Americans leave high school prepared for neither college nor for the job market. While the knowledge base is rapidly expanding, the number of traditional jobs is shrinking. Newly developed jobs require greater sophistication and preparation (National Commission on Excellence in Education [NCEE], 1984). Coppeman states, "Each generation of Americans has outstripped its parents in education, in literacy, and in economic attainment. For the first time in the history of our country, the educational skills of one generation will not surpass, will not equal, will not even approach, those of their parents" (NCEE, 1984, p. 13). The changing status of the world economy makes it necessary to not only reverse the decline in school performance that was addressed by the first round of reform, but makes it necessary to reach higher standards than ever before (Carnegie, 1986).

Excellence in education depends primarily upon recruiting and retaining the best classroom teachers at a time when American schools face serious problems recruiting and retaining high caliber graduates. While the teaching profession has historically attracted college graduates who score below average, both the quality and number of those entering the education profession are declining (Brickell, 1984; Carnegie, 1986; Cross, 1987; Excellence in Education Task Force [EETF], 1984; NCEE, 1984).

Teachers receive low salaries and low prestige and, as well, fail to have access to a staged career with the opportunity for advancement. In High School: A Report on Secondary Education in

America, Boyer (1985) reports that teachers are deeply troubled about salaries, loss of status, and the lack of recognition and rewards in their profession. Educators' salaries are not generally commensurate with the training, skills, and responsibility of the profession. The drive for excellence in education must begin by confronting these conditions. The educational environment must include high expectations for teachers, students, and administrators, with commensurate rewards for meeting these expectations (Brickell, 1984; Carnegie, 1986; Cross, 1987; EETF, 1984; NCEE, 1984).

Public school reform seems to center jointly on teacher quality (how to attract and train better teachers) and on the quality of the school workplace (how to make the environment more conducive to good teaching) (Cross, 1987). As standards, responsibilities, and expectations increase, compensation must also increase. Teachers who assume extra responsibility and are judged to be effective by generally accepted criteria must be rewarded accordingly (Carnegie, 1986; EETF, 1984). Improved compensation for educators will require additional funding for education, but the Carnegie report (1986) states that many polls indicate that Americans would be willing to finance significant increases in school funding if they can be convinced that significant improvements in performance will follow.

Merit or performance-based pay and incentive pay have become popular, but controversial, issues in the national debate over the improvement of education (Cross, 1987). President Ronald Reagan, in support of merit pay for teachers, stated, "Secretary Bell and I have been pushing hard for a national agenda for excellence in

education, and one of the first items on it is the concept of merit pay for teachers. If we want to achieve excellence, we must reward it" (Jung, 1984, p. 7).

The basic concept underlying most merit pay proposals is that teachers can be motivated to perform more effectively if some form of monetary incentive is available for outstanding performance (Duttweiler, 1986). In its pure form, merit pay is a compensation system in which workers' pay is based upon their performance. Workers who exhibit poor performance earn less while workers who exhibit good performance earn more. In education, merit pay can come in many forms with merit being the determinant of only part of a teacher's income. Examples of merit pay in education might be a bonus plan that supplements the pay scale to reward teachers for special services, a multi-track pay scale that advances outstanding teachers more rapidly on the salary scale, or a bonus pay plan for specific accomplishments (Johnson, 1986).

Concerned about the excellence in education, the state of Iowa has focused upon improving the quality of education, teachers' salaries, and teacher accountability. In response to these concerns, on June 9, 1987, Iowa Governor Terry E. Branstad signed into law H.F. 499, known as the "teacher salary bill" (Iowa Department of Education [IDE], 1988). The goal of the Phase III section of the law is to enhance the quality, effectiveness, and performance of Iowa's teachers by promoting teacher excellence through the development of performance-based pay plans and supplemental pay for additional instructional work assignments (IDE, 1987).

According to the Code of Iowa (1988), Iowa public school superintendents are responsible, as chief executive officers of the board of education of their local school districts, with the responsibility of monitoring and assessing both staff and student performance. They are also responsible for the submission of their district's annual Phase III proposal to the Department of Education. It may be assumed that Iowa school superintendents would, therefore, have adequate working and personal knowledge of both their district Phase III plans and the performance of students and staff. This would put superintendents in a position of being able to provide informed insight into the effectiveness of Phase III plans and their effect on student and staff performance in their school districts.

Statement of the Problem

Since the implementation of Phase III, the state of Iowa has spent $164,000,000 to fund the state-wide program. Has this expenditure produced the kind of results that were expected by the state, as perceived by Iowa school superintendents? Have Phase III expenditures provided an investment that has made a difference in student and staff performance?

Significance of the Study

This study adds to the body of knowledge about the effect of Phase III plans on Iowa school reform efforts and the effect of supplemental and performance-based pay plans on improving student and teacher performance. Phase III has been a major

impetus in Iowa in the state's thrust toward school improvement. An evaluation of the effectiveness of the Phase III program would be beneficial to the forging of future policies regarding educational reform in Iowa.

About 70 percent of the educators surveyed in a recent study commissioned by the Iowa Department of Education (North Central Regional Educational Laboratory, 1992) supported the statement that Phase III funds had made a positive impact upon student academic achievement and teacher excellence. An analysis of test scores for targeted school districts, however, showed neither unusual gains or losses on achievement as measured by standardized test scores. Teachers interviewed in the NCREL study generally perceived that real and fundamental change had occurred as a result of Phase III activities. When administrators were interviewed, 80 percent of the principals and 68 percent of the superintendents believed that real and fundamental change had occurred in the educational process in their district. The NCREL study utilized a combination of evaluation procedures, including case studies, surveys, and analysis of plans and reports. The survey technique involved an open-ended survey, which allowed the respondent to construct the response, so responses were not focused on the same specific criteria for each respondent (NCREL, 1991). This study will focus on the same specific criteria for each respondent in a forced-response survey format, which, by forcing the respondent to select one of five responses for each question, should allow for more definitive comparisons of responses (Wiersma, 1986).

Section 279.20 of the Code of Iowa (1988) states that the superintendent of schools is the executive officer of the board of education and, with the board, jointly exercises such powers and duties as may be described by law or by rules adopted by the board. Section 280.12 directs the board of directors of each public school district to evaluate and maintain a record of progress toward long-range and short-range goals that includes reports of student performance and results of school improvement projects. Section 279.23A charges local boards with implementing evaluation procedures to evaluate the performance of school district personnel. Public school superintendents would be responsible for evaluation of staff and pupil performance, as the executive officer of the board, as directed by these statutes of Iowa law. Their perceptions of student and staff performance should then be based upon a working knowledge of these performance levels.

This study should show, as measured by the perceptions of Iowa school superintendents, if increased monetary rewards for teachers provided by Phase III funding have resulted in improved teacher and student performance. The study should also report differences in superintendent perceptions of the effectiveness of different types of school district Phase III plans, that is, those that are totally performance-based pay, those that combine performance-based pay and supplemental pay, and those that are totally supplemental pay plans. This study of superintendents' beliefs regarding the effectiveness of Phase III would add another valuable perspective in the evaluation of Phase III programs.

Professional educators can gain broader information from the study regarding superintendents' perceptions of the effectiveness of Phase III performance-based pay and supplemental pay plans. This data may help provide valuable background information to support future local school district decisions concerning performance-based and supplemental pay.

Major Research Questions

Iowa law makers appear to believe that supplemental pay and performance-based pay for teachers are of major importance to the excellence in education movement in the state. The inclusion of incentive pay and performance-based pay as major components of H.F. 499 reflect this philosophy (IDE, 1988).

School superintendents are charged by the Code of Iowa (1988) with the responsibility of monitoring and assessing student and staff performance. Since superintendents are required to be knowledgeable about student and staff performance, and are certainly in a position to monitor the performance of both groups, it is assumed that they have adequate knowledge of student and staff performance to allow them to render meaningful evaluation of these areas.

The following major research questions are addressed in this study:

- What effects, as perceived by Iowa school superintendents, have Phase III supplemental and performance-based pay plans had upon student and teacher performance?
- When perceptions of teacher performance are examined, are there differences in superintendents' perceptions of the

effect of Phase III on staff development, teacher planning, teaching performance, curriculum development, teacher decision-making, and communication?

- Do Iowa school superintendents believe that there is a difference in student and/or staff performance when performance-based pay is a component of Phase III proposals?

- Do superintendents of Iowa school districts that have, in their Phase III plans, only performance-based pay, only supplemental pay, or a combination of performance-based pay and supplemental pay differ in their perceptions of the effect of Phase III programs on teacher and student performance?

- Reviewing the literature in this area reveals little information concerning school district size as related to either performance-based pay or supplemental pay. Are there differences in the perception of superintendents of small Iowa school districts of the effectiveness of Phase III programs, as compared to the perceptions of superintendents of large Iowa school districts?

Hypotheses

Null Hypothesis 1: Based on superintendents' perceptions, Phase III supplemental pay and performance-based pay have no effect upon student and teacher performance.

Null Hypothesis 2: Based on superintendents' perceptions, Phase III plans that contain performance-based pay components have no different effect than those Phase III plans that do not contain performance-based pay.

Null Hypothesis 3: Superintendents from small, medium, and large school districts will report no significant difference in

perceptions regarding the effect of Phase III upon teacher and student performance.

Null Hypothesis 4: Superintendents from school districts that have only performance-based pay, only supplemental pay, or a combination of performance-based pay and supplemental pay in their Phase III programs will not differ in their perceptions of the effect of Phase III upon teacher and student performance.

Sources of Data

The major source of data for this study will include perceptions of Iowa school superintendents as obtained from the Superintendent Perceptions of Phase III Survey questionnaire. This questionnaire was designed by the researcher. It will distributed to a representative sample of Iowa school superintendents and collected by a mailing process. Reliability and validity of the instrument is discussed in the third and fourth chapters of this document.

Definitions

In order to provide consistency in interpreting this study, a standardized definition of terms is utilized to help bring clarity to the study.

Performance-based or merit pay: a compensation system in which workers' pay is based upon their performance. A reward can only be received when job performance meets or exceeds a predetermined standard. Performance-based pay plans in this study include any

Phase III plan approved by the Iowa Department of Education as performance-based pay.

Supplemental or incentive pay: a compensation system that provides supplemental pay for additional work assignments beyond workers' regular assigned duties. Incentive or supplemental pay plans in this study will include any Phase III plan approved by the Iowa Department of Education as incentive or supplemental pay.

Proposal: Phase III proposal developed by the local school district.

Plan: Phase III proposal submitted by the local school district board of education to the Iowa Department of Education and approved by the Iowa Department of Education.

Regular compensation: the salary determined by an established salary schedule for the experience and educational level at which a teacher falls, exclusive of supplemental pay for non-instructional duties, extended-day or extended-year contracts, and salary bonuses for exceptional performance.

Assumptions

One of the responsibilities of a superintendent of schools is to monitor and assess the performance of students and staff in the school district administered by the superintendent (Code of Iowa, 1988). Superintendents are also responsible for the annual submission of final district Phase III plans to the Iowa Department of

Education. It is assumed, therefore, that public school superintendents have sufficient knowledge and understanding about Phase III plans in their districts to personally be able to analyze and evaluate them. Thus, it is assumed that superintendents, as chief executive officers of their districts, have informed and relevant perceptions about the effect of Phase III plans upon the performance of staff and students in their districts.

Limitations of the Study

This study is limited to the analysis of perceptions of Iowa public school superintendents regarding the effectiveness of Phase III programs. Specifically, the study is limited to an analysis of superintendent perceptions of the effect of Phase III supplemental and performance-based pay programs upon the performance of students and staff. The results of this study cannot be generalized beyond the perceptions of superintendents to the perceptions of other educators, including principals and teachers.

CHAPTER 2

Review of the Literature

Introduction

In this chapter, a review of selected literature pertinent to the study is presented. Current problems in education, from both a national and state perspective are discussed, including the call from some quarters for the adoption of merit and incentive pay as a path to school improvement. Both the theoretical and historical background of performance-based pay and supplemental pay are reviewed. The review of the literature will discuss the historical aspects of performance-based and incentive pay, the perceived advantages and disadvantages of merit and supplemental pay, and the criteria for developing such plans. The Iowa Phase III plan for performance-based pay and incentive pay will be reviewed.

Overview of Problems in Education and School Reform

The 1980's will be remembered for the outpouring of concern about the quality of education in America. The nationwide effort to improve our schools and student achievement rivals the efforts of any period of American history (Carnegie, 1986). At the first meeting of the National Commission on Excellence in Education, President Ronald Reagan said, "Certainly, there are few areas of American life as important to our society, to our people, and to our families as our schools and colleges" (NCEE, 1984).

Student Performance

Fueled by a barrage of critiques on education that began in 1983, America's schools came under close scrutiny. Substantive problems included declining test scores, unfavorable comparisons between the achievement levels attained by American students and students from other nations, and documentation that the best college students shied away from education as a profession (Johnson, 1986). Both American citizens and educators appear to have lost sight of both the basic purposes of schooling and the high expectations and disciplined effort needed to attain them. The average citizen today is better educated than the average citizen of a generation ago, however, the average graduate of American schools and colleges is not as well educated as the average graduate of 25 years ago, when a much smaller proportion of our population completed high school and college (NCEE, 1984).

In 1984, the National Assessment of Educational Progress found that only 5 percent of American 17-year-olds still in school had advanced reading skills that enabled them to synthesize and restructure ideas presented in reading materials. Only 20 percent could produce a short piece of persuasive writing that reviewers judged adequate or better. Only 24 percent could clearly describe an imaginary situation. Only 38 percent could produce a detailed and well-organized informative description. About one-fourth of American students do not graduate from high school. In some urban areas, nearly one-half drop out. Not only do many high school graduates lack essential skills, but over 30 percent of college freshmen read below the seventh grade level (Nathan, 1986).

A Nation at Risk (NCEE, 1984) lists several dimensions of risk in America's educational system. International student achievement comparisons of the past decade show that American students were never first or second on 19 tests and were last seven times when compared to other industrialized nations. Average achievement of high school students on most standardized tests is now lower than when Sputnik was launched. Achievement tests show consistent declines in mathematics, physics, and English scores. More than half of gifted children do not achieve at their tested ability level. Scholastic Aptitude Tests (SAT) scores show an unbroken decline from 1963 to 1980. Both the number and the proportion of students who exhibit superior achievement scores on the SAT's have declined dramatically. In this nation, 23 million adults are functionally illiterate. Of all 17-year-olds in the U.S., 12 percent are functionally illiterate. Minority youth illiteracy is estimated to be 40 percent. Many 17-year-olds do not possess expected high order thinking skills. Almost 40 percent cannot draw inferences from written material, only 20 percent can write a persuasive essay, and only one-third can solve a mathematic problem requiring several steps. Science achievement scores of American 17-year-olds, as measured by national assessments of science in 1969, 1973, and 1977, showed a steady decline. Remedial mathematics courses in public 4-year colleges increased by 72 percent between 1975 and 1980. They now constitute one-fourth of all mathematics courses taught in those colleges. Leaders in business and in the military complain that they must spend millions of dollars on costly remedial education and

training programs in such basic skills as reading, writing, spelling, and computation.

Economic Factors

Educational researcher Paul Hurd believes that many American students are scientifically and technologically illiterate. John Slaughter, former Director of the National Science Foundation, echoes Hurd's concern and warns of a growing chasm between a small number of scientific and technological elite Americans and an ill-informed citizenry, ignorant of many scientific issues (NCEE, 1984).

Other countries are overtaking the United States in commerce, industry, science, and technological innovation. Education undergirds American prosperity, security, and civility. While Americans can take pride in historical accomplishments of their schools, the educational foundations of the nation are being eroded by a rising tide of mediocrity that threatens America's future success. Other nations are matching and surpassing American educational attainments. A Nation at Risk states, "If a foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war" (NCEE, 1984, p. 5). The fact is that Americans have allowed this to happen. The growth in student achievement scores that occurred in the wake of the Sputnik challenge has declined. Educational support systems that are essential to the nation's growth have been discarded, reduced, or dismantled. The decline of America's schools has been compared to an act of "unthinking, unilateral educational disarmament" (NCEE, 1984, p. 5).

Spady and Marx (1984) reinforce the concept that America's defense, economy, and competitive position in the global community, as well as the successful maintenance of a free and democratic society depend upon a sound educational system. All citizens share a responsibility for the success of their schools and the educational system. Americans need to know that individuals in our society who do not possess the levels of skill, literacy, and training essential in this new era will be effectively disenfranchised, not simply from the material rewards that accompany competent performance, but also from the chance to participate fully in a citizen's national life. A high level of shared education is essential to a free, democratic society and to the maintenance of a common culture in a nation that prides itself on pluralism and individual freedom (NCEE, 1984). All Americans must be offered the same quality of education currently received by the fortunate few. Failure to do this will mean a steady erosion of the American standard of living. Besides economic competition, this must be done to provide equal opportunity for all children and to maintain an informed population capable of self-government (Carnegie, 1986). Thirty years ago, Richard Hofstadter pointed out that the belief in mass education was not founded upon a belief in the development of children's minds or upon pride in learning but rather upon perceived political and economic benefits of education. Those benefits to society must continue today (Hofstadter, 1962). If they do not continue, at risk is the nation's promise that all, regardless of race, class, or economic status, are entitled to a fair opportunity to develop to their maximum potential so they can attain the education needed to secure gainful employment and manage

their own lives. This not only promotes personal success but the success of society at large (NCEE, 1984).

Societal Factors

In American schools, students have not developed appropriate study skills or the willingness to spend time on homework. American students spend much less time on school work than students from other nations and their time spent in the classroom and on homework is often used ineffectively (NCEE, 1984).

Societal changes in the United States have contributed to the problems in education. The proportion of families with school age children has dramatically declined, bringing a concomitant decline in the level of automatic support for our schools. Simultaneously, the number of low income, limited-English-speaking, and single parent families has dramatically increased (Nathan, 1986). Many of the social changes that have brought problems to education have also made teaching a less attractive career. The public schools now serve a highly diverse student body that includes a varied mix of ethnic origins, differing abilities to speak English, highly variable home environments, and changing views on discipline and social propriety. Rapidly eroding adult authority structures have resulted in a serious weakening of parents' ability to control their children's behavior and conduct, along with a reduction of schools' *in loco parentis* role. Multiple diversions in our society compete with the school for students' attention, including the significant number of teenage students who hold jobs and the time that television draws students of all ages away from academic pursuits. The information explosion

in our society requires a strong response from the schools. Americans expect the schools to fulfill roles in health and social areas, as well as in academics (Cresap, McCormick, & Paget, 1984).

Teachers and Teaching

Achieving success in education depends upon reaching for more demanding standards than educators have attempted before. The key to this success lies in the creation of a teaching profession equal to the task. The Carnegie report (1986) states that any reforms in education will be short lived if professional educators do not possess high skills, capabilities and aspirations.

According to Johnson (1984), there is no consensus about what constitutes effective teaching or how to measure it. Because of the diverse goals of schools and all that teachers are expected to accomplish, it is not surprising that the results of teaching have not been fully defined or accurately measured. The consistency and quality of the raw materials of teachers' work, the children they teach, are beyond their control. Teachers are expected to do the best they can with the children that are assigned to their classes (Johnson, 1984).

The Association for Supervision and Curriculum Development Task Force on Merit Pay and Career Ladders reports several organizational characteristics currently found in most schools that discourage excellence (Duttweiler, 1986). Peer support systems that encourage excellence in other professions are absent in education. Teachers are expected to act like professionals but they are not treated like professionals. They are rarely involved in meaningful

discussions and decisions on matters that directly affect their classroom teaching. Instructional time is reduced because of poor administration, too many interruptions, too much paper work, and bureaucratic requirements. Teachers have little control over staff development. School organization and school time constraints discourage collaboration. No processes are in place for self-directed review and revision.

The FINE report states (EETF, 1984, p. 28), "Most people who choose to be educators are hard working, caring, and idealistic. They come to the profession with good spirit and optimism." Teacher motivation, however, is weakening. Teacher burnout, referring to the stress, alienation, and apathy felt by teachers, is a growing problem. In general, teachers see their intrinsic rewards diminishing while demands grow (Cresap et al., 1984). Much has been written about the poor morale of teachers in our schools. Young people do not want to enter teaching. Many of the best and the brightest teachers are leaving the profession (Cross, 1987). Some of the recent reports on education have implied that teachers are primarily responsible for the absence of excellence in education. This implication is largely misdirected and oversimplified. America's teachers are overworked and underpaid (EETF, 1984).

Several studies have identified problems that have eroded the attractiveness and contribution of the teaching profession (Duttweiler, 1986; Cresap et al., 1984; Cross, 1987; EETF, 1984). Teacher salaries are lower than salaries for other professionals with comparable training and expertise. Teachers endure poor working conditions, including inadequate facilities, supplies, and support

materials. There is a loss of prestige and public esteem for the work of teaching and those who do it. Community recognition and support is lacking. There is a lack of opportunity for career advancement to positions requiring higher level skills and expertise. Teachers are isolated in the classroom, with little opportunity or incentive for collegial relationships with other peers. Increased conflict between teachers and administrators inhibit cooperation in school improvement. Teachers are often assigned to teach courses for which they are not adequately prepared and are assigned to perform many non-teaching duties. The diversity of today's student population, many of whom are academically unmotivated, contributes to job dissatisfaction and burnout.

Many teachers are leaving the profession and a growing number indicate that, if they had it to do over, they would not choose teaching as a career. In 1966, Feistritzer found that 9 percent of teachers surveyed would not become teachers again. In a National Education Association survey in 1981, 36 percent indicated that they would not choose to become teachers again (Cresap et al., 1984).

Besides encouraging teachers to leave the profession, the problems of today's education have a negative impact upon recruitment of new teachers. Until improvements are made in the salaries and the professional working life of teachers, as well as in teacher preparation programs, not enough academically able students will be attracted to teaching (NCEE, 1984). Students entering education today have significantly lower scores on college entrance exams than a decade ago. Students training to be teachers rank fourteenth out of 16 occupational groupings on the SAT verbal

scores and fifteenth out of 16 on SAT quantitative scores. Although SAT scores in general have dropped, teacher trainees' scores have declined at a faster rate. Similar trends are exhibited by analyses of the Graduate Record Exam (GRE), the National Teacher Examination (NTE), and high school grade point averages (Cresap, 1984).

The American mass education system was designed in the early part of the century to meet the needs of a mass-production economy. It may not be a successful system in the future unless it raises and redefines essential standards of excellence, as well as making quality and equality of opportunity compatible with each other (Carnegie, 1986). A Nation at Risk provides three definitions of educational excellence. Excellence for the individual learner is defined as "performing on the boundary of individual ability in ways that test and push back personal limits, in school and in the workplace" (NCEE, 1984, p. 16). The definition of excellence for an educational institution is that the school or college "sets high expectations for all learners, then tries in every way possible to help students reach them" (NCEE, 1984, p. 16). Educational excellence for society must adopt these policies, "for it will then be prepared through the education and skill of its people to respond to the challenges of a rapidly changing world" (NCEE, 1984, p. 16). Acceptance of and belief in these definitions result in significant political implications that cut across age, generations, race, and political and economic groups. Public expectations will demand that political and educational leaders act forcefully on these issues. Studies show that Americans believe that education is the major

foundation for the future strength of our nation and place education above all other categories for Federal funding priority (NCEE, 1984).

The public has no patience with superfluous and undemanding high school offerings. Standards preferred by the public far exceed the strictest graduation requirements of all states and exceed the admission standards of all but a few universities (NCEE, 1984). In Iowa, the public is not totally satisfied with the present state of education. Areas of concern include students' preparation for further education and for the world of work, low expectations for students, and complaints regarding discipline and curriculum (EETF, 1984).

Clark (1987) reports that high school seniors rate their own schools' quality as high, but doubt the quality of public schools in general. Ratings decline when they rate schools in the community as a whole, rather than the school they attend. Ratings continue to decline when seniors rate schools on a national basis. When evaluating their own schools, 24 percent received an A, 48 percent received a B, 24 percent received a C, 3 percent received a D, and only 1 percent received an F grade. When seniors rated public schools on a national basis, only 5 percent gave schools an A grade. Less than 1 percent of non-public school seniors gave them an A. A grade of D or F was given to public schools on a national basis by 20 percent of non-public school seniors and 10 percent of public school seniors. The median grade given on a national level was a C. The same phenomenon appears in ratings of schools by parents in Gallup polls of the public's attitudes toward the public schools.

Although many polls place the plight of the schools at the top of the American public's concerns, the chasm between generalized

concern and a readiness to support concrete remedies is nearly as wide as ever (Kaplan, 1992). Implementation of needed recommendations for change will be expensive. The question is one of priorities. Surveys show that most Americans would approve spending additional money in education more than in any other area. The true value of quality education to the individual, the community, the economy, and the nation is intangible, but profound. Educational excellence can only occur when highly qualified and competent professionals are employed in the schools. It is important to appropriately reward and recognize those educators who provide quality instruction for our students. Competitive salaries must be paid to attract the best and the brightest to professional education (EETF, 1984).

Historically, teachers' pay has never been high when compared to other professions (Cresap et al., 1984; Rouech & Baber, 1986; Carnegie, 1986; EETF, 1984). Instead of high pay and prestige, teaching offered job security, altruistic satisfaction, and upward mobility for a segment of the population emerging from blue collar or immigrant status. Also, education was able to capitalize on restricted job opportunities for women, the job scarcity of the Depression, and expanded college opportunities provided by the GI Bill after World War II (Cresap et al., 1984).

When examining compensation, a comparison of the skills and qualities required in education should be made with those skills and qualities required in other jobs and professions. Teachers should be compensated at a level that allows a reasonable standard of living when compared to the community and that is also commensurate

with the importance of the educator's role (EETF, 1984). Not only are beginning salaries for teachers low, but salaries for all teachers have not kept pace with inflation. In the decade following the 1971-1972 school year, the average teacher's salary rose 81.4 percent. During the same time period, the Consumer Price Index rose 129 percent (Education report card, 1985). Teachers have seen their real dollar income decline while other professions' incomes climbed. Also, teachers' pay is low to begin with when compared to other college graduates. In 1984, only 1 percent of teachers earned $40,000 or more, but 15 percent of those who left the teaching profession in the previous five years earned that much. While 32 percent of the ex-teachers made $20,000 or less, 42 percent of current teachers' salaries were in this category.

American teachers' salaries also compare unfavorably with educators' salaries elsewhere. When salaries of Japanese teachers are compared to other Japanese professionals' salaries, the results are 37 percent higher than a similar comparison in America. When teachers at the top to the salary scale are compared, the Japanese teachers' advantage exceeds 80 percent (Carnegie, 1986).

According to the Carnegie report (1986), Americans already spend more per capita on education than any other country in the free world. Increased finances for salaries and reforms in education will come only if those responsible for financing education are convinced that the funds are used as effectively and efficiently as possible. The FINE report states that the public will continue to support education only if school boards, teachers, and administrators are willing to submit to reasonable and fair evaluation. The public

wants results. Requests for increased taxes to support education must be accompanied by plans to improve the system. Besides being long run in nature, these plans must create internal methods of evaluation which let the public measure progress (EETF, 1984). Teachers must offer the public a commitment to the highest standards of professional competence. They must acknowledge their basic responsibility for performance and must work for results (Kean, 1986). Policy makers will be tempted to implement only those reforms that cost little in organizational trauma or dollars. This would doom the reform to defeat (Carnegie, 1986). Changes in the present system should not be recommended if the legislature, school boards, and the public are not willing to support those changes with dollars.

Regarding teacher pay, the Carnegie task force recommends that teachers' salaries and career opportunities must be made competitive with other professions and incentives for teachers must relate to school-wide student performance (Carnegie, 1986). According to the research, resolution, and reform that has occurred, teachers appear to be keys to both the problems and the solutions. Teachers are considered insufficiently qualified and committed. Low pay, low status, inadequate training, unstaged careers, poor working conditions, and lack of recognition have rendered them ineffective. In response, state and local agencies have adopted an array of incentive plans (Johnson, 1986). State and local governments, including school boards, governors, and legislatures, have the primary responsibility for governing and financing education. Their

educational policies and fiscal planning should incorporate proposed reforms (NCEE, 1984).

School Reform

Every state has enacted or is considering implementing educational reforms, from upgrading curricula to raising teachers' salaries and rewarding good teaching (Education report card, 1985). State governments should consider four areas for improving the quality of teaching in American schools. First, teacher education and certification requirements should be upgraded. Second, those school districts that develop and implement incentive programs should be provided with financial assistance. Third, state-wide incentive programs should be established. Fourth, the state should provide technical assistance in the planning and implementation of incentives to improve the quality of teaching (Cresap et al., 1984).

Three major responsibilities fall into the province of the federal government when the problems that face school excellence is addressed. First, financial assistance should be provided to help qualified students enter teaching, especially in areas of national shortage. Second, local school districts should receive federal grants to demonstrate the effective use of a range of incentives to improve the quality of teaching. Third, federal funding should support research about the impact and effective use of varied incentives in school districts and states (Cresap et al., 1984).

The National Governors' Association, it its recent report, Time for Results: The Governors' 1991 Report on Education, asks seven of

the toughest questions that can be asked about education (Alexander, 1986).

> *Why not pay teachers more for teaching well?*
>
> *What can be done to attract, train, and reward excellent school leaders?*
>
> *Why not let parents choose the schools their children attend?*
>
> *Why are expensive school buildings closed half the year when children are behind in their studies and many classrooms are overcrowded?*
>
> *Aren't there ways to help poor children with weak preparation succeed in school?*
>
> *Why shouldn't schools use the newest technologies for learning?*
>
> *How much are college students really learning?*

The governors have focused on results because they have limited terms in office and want to make a lasting impact on education in their states. They are not satisfied with the status quo. They further believe that highly educated citizens are vital to economic development. Those states that have invested in education have attracted new industry within their borders (Nathan, 1986).

In Time for Results, the governors recommended several educational reforms. Fair and affordable career ladder salary systems should be worked out that recognize real differences in function, competence, and performance of teachers. States should create leadership programs for school leaders. Parents should have more choice in the schools their children attend. The nation, states,

and local districts need better report cards to report results about what students know and can do. Districts and schools that do not make the grade should be declared operationally bankrupt, taken over by the state, and reorganized. While American students are undereducated and school buildings are overcrowded, it makes no sense to keep closed for half the year the school buildings in which America has invested a quarter of a trillion dollars. States should work with four and five-year-olds from poor families to help get them ready for school and to decrease the chance that they will drop out later. Better use of technologies through proper planning and training in the use of video discs, computers, and robotics is an important way to give teachers more time to teach. States should insist that colleges assess what students actually learn while in college (Alexander, 1986).

The governors believe that the first wave of reform was beneficial because it raised academic standards and expectations. The next wave of reform should continue to focus on improving student achievement and should help schools become more efficient. There is an increased likelihood that more students, especially at-risk students, will achieve the higher standards established during the first wave of reform. Clear and measurable goals should be established that relate directly to student achievement, attendance, and rates of school completion. These goals will help states alter the structure of fiscal rewards and incentives while giving schools more flexibility (Nathan, 1986). Many claim that governors must make it clear to teacher organizations, administrators, and school boards that a new way of doing business is necessary that cannot be imposed by

government fiat or won at the bargaining table. Effective reform can only be achieved over time, through discussion and experimentation, with considerable forbearance on all sides (Kean, 1986).

Governors are willing to work for increased funding for education, as long as they can show the public that the funds will have a positive impact on student retention and achievement (Nathan, 1986). Alexander (1986, pp. 202-203) states, "The governors are ready for some old-fashioned horse trading. We'll regulate less, if schools and school districts will produce better results. Real excellence cannot be imposed from a distance. Governors don't create excellent schools -- local school leaders, teachers, parents, and citizens -- do."

Former NEA president Mary Hatwood Futrell warned governors that the recommendations in Time for Results will be costly and will work only if sanctioned at the local levels by teachers and principals. Albert Shanker, president of the American Federation of Teachers, agreed with Futrell that the governors should find funds to enact their recommendations. He also urged educators to not wait for everything to be perfect before beginning to make changes in the way they do things (Educators ready, 1986).

State legislatures and departments of education have responded with a myriad of educational improvement programs that fall into two general categories, according to Odden and Anderson (1986). The first type of program is school-based and primarily involves local school people in planning, problem solving, and program implementation. The second type is instructionally focused and is designed to improve the skills of teachers and administrators.

In the category of school-based programs, California's School Improvement Program provides schools with approximately $100 per pupil to design and implement a school-based improvement program. Colorado periodically requires schools to assess their needs and plan strategies to meet those needs. Colorado schools may also join the Cluster Program, in which they work cooperatively with other schools on school improvement issues. Lezotte's correlates of effective schools are incorporated into Connecticut's School Effectiveness Program and Ohio's Effective Schools Program, both of which involve planning at the school level to implement strategies to achieve more effective education. In Pennsylvania's Long-Range Planning for School Improvement, schools work on two or three of Pennsylvania's 12 goals for quality education. The strategies in these states view school-wide change as the springboard for educational improvement. The assumption is that more effective schools will improve teaching and increase student achievement.

In the category of instructionally focused programs, Maryland's School Improvement Through Instructional Process Program aims at expanding and strengthening the pedagogical skills of experienced teachers. Beginning teachers are the focus of Georgia's Teacher Appraisal Program, which includes assessment of new teachers and on-the-job skill development. Hunter's mastery learning provides the core of Missouri's Instructional Management System, while Arkansas' Program for Effective Teaching targets the improvement of both the instructional skills of teachers and the supervisory skills of administrators. States with instructionally focused programs view

improved teaching and better instructional supervision as elementally crucial to educational improvement.

According to Cooley and Thompson (1990), many school districts have not kept pace with sound educational practices that lead to educational improvement. A result of pressure from business and industrial leaders has been increased control of local school boards by state education agencies. State legislatures and state departments of education have been forced to develop a variety of mandated programs for local school districts.

Although there seems to be an emerging consensus that a teacher's salary should reflect the teacher's contribution to the education enterprise, reformers disagree over what counts as a recognizable contribution (Monk & Jacobson, 1985). Because recent educational reforms have come from politicians instead of the educational community, there are two reasons that the changes may not result in improved schooling. First, because of the comfort of routine, schools seek to protect themselves from significant change. Pressure to change often results in superficial changes, largely symbolic, that suggest to the sources of pressure for change that change has occurred. Second, unless reforms address the aspects of education that are most directly related to student learning, they are not likely to succeed (Rosenholtz, 1986).

Educational reforms must meet on a commitment to shared values and goals. Classroom teachers, administrators, legislators, and society-at-large must reach agreement on the missions of education. Most reform reports, however, charge education with having lost its sense of mission and purpose. For example, A Nation at Risk charges

that both American educational institutions and American society seem to have lost sight of the basic purposes of schooling. Other reform reports make similar statements regarding the mission of education (Cross, 1987). Most school districts, especially large urban districts, have no consensus about their goals and mission. According to Johnson (1986) teacher performance will be vague, muddled, or conflicting when schools pursue many goals simultaneously.

The Education Commission of the States Task Force on Education for Economic Growth, in its report Action for Excellence, states that every state and every local school district should drastically improve their methods for recruiting, training, and paying teachers. This improvement should begin with teacher salary schedules that are competitive with pay in comparable jobs and professions. Financial incentives for teachers should be keyed to differing responsibilities. "And it must go on to create extraordinary rewards for extraordinary teachers; expanded pay and recognition for teachers, not just for reaching the upper level of seniority, but for reaching the upper levels of competence and effectiveness as well" (Jung, 1984, p. 7).

A Nation at Risk also contains strong recommendations. First, state and local high school graduation requirements should be strengthened. Schools must adopt more rigorous and measurable standards and high expectations for both academic performance and student conduct. Significantly more time should be devoted to learning the new basics. This requires more effective use of the current school day, a longer school day, or a longer school year. Teacher preparation must be improved and teaching must become a

more rewarding and respected profession. New teachers should be required to meet high educational standards, to demonstrate competence in an academic discipline, and to demonstrate an aptitude for teaching. Teachers' salaries should be increased and should be professionally competitive, market-sensitive, and performance-based. Teachers' salaries, promotion, tenure, and retention should be tied to an effective evaluation system. Schools should adopt an eleven month contract for teachers to allow for curriculum and professional development, students' special needs programs, and a more adequate level of teacher compensation. Career ladders should be implemented to differentiate between teachers with varying degrees of experience and competence (NCEE, 1984).

In Educating Americans for the 21st Century, the National Science Board Commission states that school districts should explore ways to adjust teachers' compensation in order to compete for and retain high quality teachers in fields where shortages exist. Local school systems should explore extending teachers' contracts in order to lengthen the school year and provide reimbursement to teachers for inservice education, curriculum development, student workshops, and other ancillary activities (Spady & Marx, 1984). In his report, A Study of High Schools, Theodore R. Sizer, former Dean of Harvard University's Graduate School of Education, recommends that educators receive salary increases with each professional advancement, in addition to cost-of-living and merit pay earned within the ranks (Spady & Marx, 1984). Nathan (1986) states that reform proposals focus on career ladders, merit pay, incentive pay,

alternate routes into teaching, rewards for schools that make significant progress, competency tests for teachers, and a greater choice among schools for parents and teachers. In general, the most powerful education groups at the state level have strongly opposed these reforms. Responses from educators have seemed to dilute, rather than improve, reform initiatives.

Most of the reform reports concur in sending two significant messages about the school staff. Ways must be found to increase staff professionalism and ways must be found to increase performance (Spady & Marx, 1984). Also, many of the reform reports have said that educators have grown lax and, as a result, the quality of education has declined. They call for a return to some earlier performance standard. The Carnegie task force has a different view. They recommend rebuilding, not repairing, the educational system to match the drastic changes needed in our economy to prepare children for productive lives in the 21st century. Changes in the demography of the teaching force threaten to eliminate the gains that have been made so far. The country can address the educational problems it faces only by having the finest teachers available. Raising teacher pay will not lead to significant improvement if the people who are paid more are not better prepared for the work they do. Pay that is high enough to attract and keep excellent teachers is not likely to occur unless standards for teachers are high enough to justify the cost. The Carnegie report sees no merit in perpetuating a system of continuing education that determines teacher compensation on the basis of credits earned after becoming a teacher. Compensation should be based upon proven

competence, not time on the job. Teachers, however, are not likely to reach for higher standards unless substantial raises in pay are provided. Also, they are not likely to be willing to be held accountable for student performance unless they control the way that their services are delivered to students (Carnegie, 1986).

Recruiting and retaining the most able college graduates in education will require schools to offer pay and working conditions that are competitive with other professional positions. Three challenges must be met if teachers of high intellectual ability are to be obtained. First, standards for entering teachers must be raised. Teachers with needed skills must be retained in the profession and teachers with similar skills recruited. Also, the system must be redesigned to take maximum advantage of these teachers while making efficient use of additional needed funds (Carnegie, 1986). Arthur Wise, Director of the Rand Corporation Center for the Study of the Teaching Profession, states that America's educational systems will continue to have a difficult time staffing schools with adequately trained and skilled teachers unless standards for entry are raised, the job of teaching redefined, and salaries increased (Higher entry standards, 1987). In some areas, such as mathematics, physics, and chemistry, critical shortages of teachers exist at the secondary level. The average math teacher's salary is only 60 percent of the beginning salary that private industry pays to math majors. A significant number of unqualified persons are teaching secondary mathematics and science. Also, many mathematics and science teachers are in need of inservice training (NCEE, 1984). College educated women who, until recent years, could become secretaries,

nurses, or teachers can now, like members of minority groups, choose from a vast array of attractive professional opportunities. Also, many of the most competent teachers in education today state that they would not choose teaching if they were beginning their careers again (Carnegie, 1986).

Rand Corporation researchers contend that throughout the 20th century, teacher shortages have been common. When teacher standards and teacher salaries were raised at the same time, teacher shortages eased and the standing of the profession rose (High entry standards, 1987). Entering salaries, average salaries, and the range of teachers' salaries should be increased to levels that are high enough to attract and retain teachers of high academic ability. Continuing education credits should no longer be used as a basis of compensation determination. Salaries of teachers should be based upon job function and level of responsibility, competence as determined by level of certification, seniority and experience in the classroom, and productivity and contribution to improved student performance. The teacher's contribution to student performance is the hardest of these attributes to assess. Performance-based compensation systems should be viewed as developmental and teachers should participate actively in their design. School districts and states should move to eliminate the obstacles to career mobility for teachers and should utilize pay incentives to assure an equitable distribution of teachers among high priority schools and school districts (Carnegie, 1986). A common theme raised by all of the reform reports is the need for the development, adoption, and implementation of incentive and merit pay systems that adequately

reward teachers for their work, based upon the quality of their work (Carnegie, 1986; NCEE, 1984; Spady & Marx, 1984; Nathan, 1986; EETF, 1984; Jung, 1984; and Alexander, 1986).

History of Merit Pay

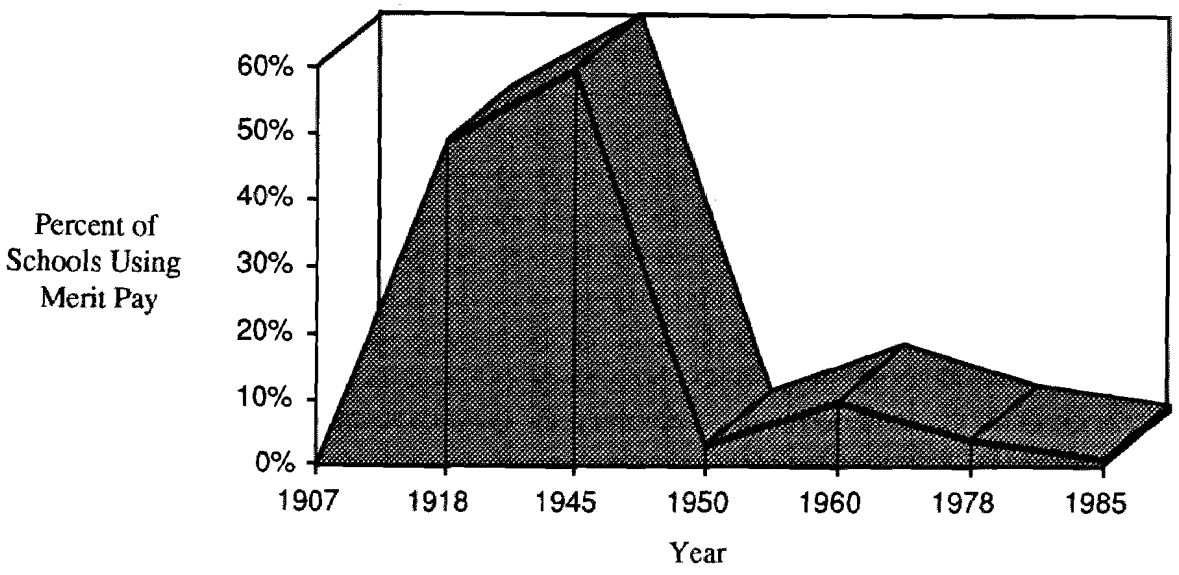
Merit pay for educators is not a new idea. Norman (1988) points out that at one time all teachers were compensated according to merit because each teacher's wage was determined individually by school districts. The first formal merit pay plan for teachers was devised in Newton, Massachusetts, in 1908 and became the preferred method of pay for teachers in the 1920's (Adkins, 1983). The state mandated salary schedule for New York City teachers in 1911 was a merit pay system. By 1918, 49 percent of school districts incorporated merit pay into their salary systems (Norman, 1988). Performance-based pay policies have been eagerly adopted and gradually abandoned during several periods of this century. In the 1920's, merit pay efforts were a result of Taylor's promises of scientific management. Beginning in the 1930's, school districts moved away from merit pay systems to a single salary schedule for teachers (Norman, 1988). Des Moines, Iowa, and Denver, Colorado, school districts were the first schools to adopt and implement what is now known as a salary schedule for teacher compensation in 1921. Uniform salary schedules are more easily administered than merit pay and traditionally pay teachers with similar experience and education equally.

In the mid-1940's, approximately 60 percent of American teachers were compensated according to some form of merit pay,

but, by 1950, 97 percent of American school districts had implemented uniform salary schedules (Luck, 1988). Following the Sputnik launching, the concern for education in the 1960's resulted in a second wave of enthusiasm for performance-based pay for teachers (Johnson, 1986; Norman, 1988). During the 1960's, approximately 10 percent of American school districts utilized merit pay for teachers in some form. By 1978, that number had fallen to 4 percent (Norman, 1988).

A third, current thrust for merit pay was prompted in the 1980's by unfavorable reports on education, a decline in American productivity, and President Reagan's statement that "teachers should be paid and promoted on the basis of their merit and competence (Johnson, 1986). By the mid-1980's, 55 percent of American school districts were examining some form of performance-based incentive pay plans for teachers and many state legislatures were implementing merit pay plans for teachers or supporting locally developed performance-based pay plans. Merit pay for teachers is not a new idea. It has been tried various times over the years, usually in response to public attention (Norman, 1987). In the mid-1980's, 99 percent of American school districts paid teachers according to a uniform salary schedule. Schools that operate successful merit pay programs for teachers appear to be small, homogeneous districts with excellent working conditions, selective teacher hiring practices, and high salaries (Murnane & Cohen, 1986).

Figure 1. Percentage of Schools in the U.S. Using Merit Pay Since 1907



In 1984, Murnane and Cohen examined six merit pay plans that had been in operation for five years or more. The districts were homogeneous in that all were small, were located in advantaged communities, hired teachers selectively, and paid those teachers well. Working conditions were excellent and cooperative labor-management relations were fostered. No urban districts with lasting merit pay plans could be found, nor was there a single documented case of a large, troubled district that had used performance-based pay successfully to improve teacher performance. Even in successful merit pay programs, Cohen and Murnane found that teachers' compensation did not vary solely on the basis of classroom performance or student achievement. Usually, extra pay was given more for specific activities, such as extra-curricular, professional, or

community activities, than for meritorious teaching. Performance-based pay became extra pay for extra work because of the shift in emphasis from classroom teaching to tasks outside of the classroom. Teachers accepted the plans as equitable because they relied on demonstrable work outside the classroom rather than on debatable assessments of classroom teaching (Johnson, 1986).

Overview of Merit and Incentive Pay

Monk and Jacobson (1985) report four aspects of a teacher's performance that, in merit pay systems, could have a legitimate bearing on the teacher's salary. The first is how much work the teacher does. Teachers can receive extra pay for taking on extra responsibilities. This has been a time-honored principle of compensation in American education in the form of extra pay for advisors, coaches, and others who have extra-duty assignments. The second aspect is the efficiency of the teacher, focusing on how adept the teacher is at translating time, effort, and other resources into desired outcomes. The third aspect is the level of the teacher's accomplishment. This focuses on the quality of one outcome, rather than the efficiency of the process. The fourth aspect is the importance of the teacher's contribution to the educational program. The labor market and other constraints have a direct bearing on the ability to recruit, hire, and retain teachers in specific fields. Teachers could be rewarded differentially, solely on the basis of the subject they teach. Those teachers who teach in a field that requires a higher level of expertise or teach in a field that has a limited

available labor pool may receive higher compensation than teachers in other fields.

In summarizing these four aspects, teachers vary in terms of how much work they do, how efficient they are when they do their work, how much they accomplish, and what it is they accomplish. These variables can all be considered in performance-based compensation programs for teachers.

Public Interest in Merit and Incentive Pay

Concerns of various school constituencies regarding excellence in education may be addressed by the merit and incentive pay issue. Teachers are concerned that salaries, never high to begin with, have fallen further behind salaries of comparable professionals. Parents and community members are concerned that increased expenditures on teacher salaries have not improved past teacher productivity and may not improve future teacher performance. Another concern is that quality teachers have been lost to private industry because of widening compensation discrepancies. Policy makers at the state and local level need to consider these concerns when incentive plans for teachers are developed and implemented (Cresap et al., 1984).

The push for merit or performance-based pay is primarily coming from national and state levels, outside of education. National commissions, state legislatures, and an aroused public are forcing local administrators and teachers to consider merit pay proposals. Top-down, state-wide merit pay implementation strategies in Tennessee and Florida have provoked serious resistance. Such strategies fail to consider the diversity of characteristics and needs in

local school districts (Natriello & Cohn, 1983). Nathan (1986) reports that education is a high priority for governors. Most have included education initiatives in their recent legislative proposals. Initiatives included both increased spending, with much of the money targeted for increasing teachers' salaries, and some redesign of the educational system.

The public should expect the schools to be more effective and efficient, but many educators find these words disturbing. They regard them as insensitive and inappropriate because they come from an economic system that is concerned with profits instead of people. Nathan (1986) defined effective as producing the intended or expected result. He defined efficient as functioning in the best possible and least wasteful manner. As opposed to private industry, educators work in a highly regulated industry that often penalizes efficiency. Major organizational changes are needed before performance and productivity will increase. The Carnegie report states that is "unreasonable to hold teachers accountable for results when many of the important decisions about how students' needs are to be met are made by others" (Carnegie, 1986, p. 89).

If improvements are to come, the public must offer teachers a professional work environment and all that goes with it. Teachers must be paid reasonable salaries as professionals. They must also have a voice in the decision-making process and in designing changed standards that define professional performance and the ways to assess performance. Teachers should also expect a willingness on the part of parents and citizens to do the things that support children's education (Kean, 1986).

Duttweiler (1986) states that teacher incentive proposals are being offered as a response to recently recognized problems in the teaching profession, including the current and predicted shortages in the supply of qualified teachers and the decline in the academic ability of new entrants to the teaching profession. The premise behind all types of incentive proposals is that these incentives will attract and retain better qualified persons in teaching and will also improve teacher effectiveness.

Advantages and Disadvantages of Merit and Incentive Pay

Barro, in The Logic of Teacher Incentives, argues that pay incentives based upon teachers' performance would strengthen teachers' motivation to perform well. Improvement is a matter of the individual teacher's choice. Rosenholtz, however, calls Barro's assertions a myth. He states that there is little agreement with Barro among those who are familiar with teachers or the conditions under which they work (Duttweiler, 1986).

Proponents of performance-based pay for teachers, according to Rosenholtz (1986), advance several arguments in its favor. First, monetary incentives will motivate teachers to excel. Proponents also believe that monetary incentives will retain good teachers in the profession. Merit pay will help attract better candidates into teaching and will keep good teachers in the classroom instead of forcing them into administrative positions.

Rosenholtz also discusses fallacies of merit pay cited by opponents to performance-based pay. First, monetary rewards do not affect change in teacher performance. Teachers value intrinsic,

psychic rewards that come from student growth and development and from confidence in their ability to help students learn. Teachers will do little to change unless they believe they will increase their effectiveness with students and enhance their professional skills. Teachers who leave the education profession identify working conditions that impede their classroom performance as the main cause of their defection. Low salaries are cited, but only as a secondary reason for leaving. Most performance-based pay plans reward the experienced teacher. This does not help recruit prospective teachers into the profession. Also, most teachers who leave teaching do so in the early stages of their careers. Competitive rewards and faulty evaluation practices that seem unjust to teachers result in lowered teacher morale. Merit pay systems where principals must select merit pay recipients from among the faculty cause positive and productive teacher-administrator relationships to deteriorate. Collaboration and collegiality disappear.

The Carnegie report indicates that gains in teacher performance are limited by current incentives that not only fail to reward performance and productivity, but sometimes actually discourage both. Rewards often do not go to those who produce the most achievement for the students, but to those who play the game, avoid controversy, and maintain the status quo (Carnegie, 1986).

Natriello and Cohn (1983) state that even school leaders who are proponents of merit pay in principle recognize that current evaluation procedures would be unsatisfactory for use in awarding merit pay. In fact, they most often cite faulty evaluation procedures as barriers to implementing performance-based pay. Duttweiler

(1986) cautions that if problems that now impede teachers' growth as full professional partners remain uncorrected, any one element, including incentive pay, will not produce teaching excellence.

Several sources (Dunwell, 1991; Johnson, 1986; Rosenholtz, 1986; Gress, et al., 1986; Carnegie, 1986; Duttweiler, 1986) suggest that unintended organizational consequences may be caused by merit pay plans. Performance-based pay tends to divide faculties and sets teachers against administrators. Dissension, rivalry, and jealousy among teachers tends to be fostered by merit pay plans. Also, under merit pay plans, teachers are often selective about information they provide the principal and tend not to bring problems to the principal's attention. Group or team rewards, however, increase cooperation and communication within a grade level or a department.

Current pay practices generally determine teacher salaries by seniority and the accumulation of graduate credits. This practice is defended on the grounds that performance-based pay would undermine the need for active collaboration and collegiality among teachers (Carnegie, 1986). Duttweiler (1986) states that evidence suggests that proposals to provide merit pay bonuses for outstanding performance may be counterproductive. The small amount of research that exists in this area indicates that the competition inherent in merit pay plans may have undesirable side effects that interfere with the collegiality that is necessary in an effective school.

According to Johnson (1984), merit pay not only is a poor teacher motivator, but may actually interfere with school improvement efforts. Education is a very interdependent process.

Teachers rely upon those who teach other grades or subjects to do their work well so the final product of the educational assembly line is a well-educated student. Teachers must also constantly cooperate with other staff members and adjust their teaching to larger program or school goals.

Because of the cooperative nature of the educational process in our schools, problems exist when student performance is a criteria for performance-based pay programs. While the Carnegie task force believes that teacher rewards should be tied to student performance, they warn that no method known for measuring student performance and connecting it to teachers' rewards is yet satisfactory (Carnegie, 1986). Psychometricians, such as Berk, conclude that the use of student test scores for merit pay is indefensible. It would be extremely difficult, if not impossible, to justify the practice as fair and equitable for all teachers (Johnson, 1986).

Mary Futrell, former NEA president and Carnegie task force member, concurs that there are no satisfactory methods for measuring student performance and linking this performance to teachers' compensation. According to Futrell, effective teaching and student performance are very much related to class size, fiscal resources, and similar factors beyond the teachers' control (Carnegie, 1986).

Johnson (1986, p. 67) states, "If the product of schooling is a well-educated student, individual teachers control only a piece of the product. However, performance-based pay plans assess each year of the teacher's work as if it were the entire production process or as if

the pieces of that process were simply additive. Teachers can neither control the quality or preparedness of the students they teach, nor can they accurately predict or regulate the uneven development rates of children."

The principle of merit pay is drawn from the pragmatism of the corporate world. While many educators endorse it in principle, they foresee problems in practice. Schools and businesses are not the same. Objective measures of teaching are lacking. Advocates of free enterprise may regard problems associated with performance-based pay as simple technicalities and may believe that school administrators lack the courage to do what should be done. The problem of reform, however, is far more complicated. Merit pay efforts in education are probably futile. Performance-based pay can achieve the goals of better teachers, better instruction, and better schools only it fits the workers and the workplace. Effective incentives, consistent with the goals of the enterprise, must be provided. These, however, are not the standards of education, but of business. Johnson (1984) states that merit pay for teachers falls short on both counts. Johnson also notes that it is ironic that industry's leaders are demanding accountability and merit pay in the schools, since it was the failings of business and industry that first focused attention on the schools.

After studying merit pay in industry, Lawler found that the practice is neither as common nor as effective as many believe. Merit pay was found to not be appropriate for all individuals or all organizations. It is effective in sales or piecework where employees work individually. Merit pay, however, is not appropriate where

work is successive (work passes from one person to another) or coordinate (work is a function of the joint effort of employees). For these reasons, performance-based pay would be difficult to implement in the schools where work is successive, accomplishments are cumulative, and cooperation is essential (Johnson, 1986).

In 1983, the Virginia Board of Education declared merit pay unsound for several reasons. The effectiveness of teaching cannot be fairly evaluated for merit pay. Merit ratings tend to reward conformity and put a premium on the absence of teacher problems. Performance-based pay fosters a competitive rather than a cooperative spirit, undermines the security of the teachers, disregards the teaching environment, and does not improve the quality of education. In place of merit ratings, the board proposed identifying meritorious schools and rewarding all of the teachers in those schools (Adkins, 1983).

Fundamental problems with merit pay cannot be surmounted by administrative resolve and persistence. The model is not ready for fine tuning or for mass replication. Technical problems, such as structuring and funding, evaluator training, observing teachers, and compiling evaluations can be successfully and skillfully done in many districts, however, a number of unresolved philosophical, technological, and organizational problems block the success of merit pay plans. Performance-based pay plans have been tried in many forms, in many places, and they have failed. An analysis of merit pay and the realities of teaching indicate that competitive pay will not serve as an incentive for good teachers. It may, in fact, interfere with other efforts to improve education (Johnson, 1984).

The Carnegie report states that "Unions, boards, and school administrators need to work out a new accommodation based on exchanging professional level salaries and a professional environment, on the one hand, for the acceptance of professional standards of excellence and the willingness to be held fully accountable for the results of one's work on the other" (Carnegie, 1986, p. 95). Collective bargaining in education, however, developed as a response to the need for teachers to achieve an acceptable standard of living and quality working conditions. Former NEA president Mary Futrell states that the union opposes performance-based pay plans and suggests that states work towards raising the base salary of all teachers to an acceptable level (Educators ready, 1986).

The failure of performance-based pay plans for teachers are usually caused by problems in the plans themselves and in their implementation. Frequent problems include difficulty in specifying organizational objectives and assessing performance, the cost of maintaining the programs, and unintended organizational consequences of the program (Johnson, 1986). According to Duttweiler (1986), administrators of school districts with failed merit pay plans indicated that merit pay failed for a number of reasons, including unsatisfactory evaluation procedures, administrative problems, staff dissension, restrictive quotas, inadequate financial incentives, lack of teacher consent, poor definition of merit, and inability to measure results adequately.

Table 1
Comparison of Advantages and Disadvantages of Merit and Incentive Pay in the Literature

Author(s)	Title	Advantages	Disadvantages
Cresap, McCormick, & Paget (1984)	*Teacher Incentives: A Tool for Effective Management*	Parent & community satisfaction. Attract & retain good teachers. Monetary rewards can improve morale. Community support if effective. Teacher support if objective.	Lower morale of unrewarded staff. Competition reduces teamwork. High financial cost. Difficult appraisal of performance. Degree of change required. Complexity of administration. Community opposition if ineffective. Teacher opposition if subjective.
Duttweiler (1986)	*Perspectives on Performance-based Incentive Plans*	Attract higher quality teachers. Retain high quality teachers. Local programs are effective. Motivates teachers to excel.	Unsatisfactory teacher evaluation procedures. Administrative problems. Staff dissension. Restrictive quotas. Inadequate financial incentives. Inability to define merit. Lack of teacher consent. Inability to measure results of teaching. Teachers value intrinsic rewards.

Carnegie Forum on Education (1986)	*A Nation Prepared: Teachers for the 21st Century (Carnegie Report)*	Teacher rewards should be tied to student performance.	Interferes with collaboration. Competition between teachers. No satisfactory method of linking student achievement to teacher performance.
Johnson (1986)	*Incentives for Teachers*	Higher productivity for a bonus. Can promote specific work behaviors. Group or school-wide incentives are more effective.	Do not improve general teaching performance. Individual teacher incentives are less effective. Dissension among teachers. Adversarial teacher/ administrator relationship. Student achievement is a cooperative effort. Student achievement is not an accurate measure of teacher performance. Inadequate teacher evaluation methods. High financial cost. Organizational problems.
Jung (1984)	*Guidelines for Evaluating Teacher Incentive Systems*	Non-monetary incentives are the most effective. Incentives motivate teachers to higher performance	Restrictive quotas. Individual rewards impede cooperative teaching efforts. Student achievement does not measure teacher performance.

Financial and Non-Monetary Incentives

According to Johnson (1986), research theories suggest that workers are motivated by the prospect of valued rewards, but will be unproductive and dissatisfied if they believe that their efforts are not equitably compensated. The best teachers remain in teaching because of intrinsic rewards, however, they may be forced to leave the profession because of poor salaries and working conditions. Efforts to retain outstanding teachers should focus on ensuring that they can do their best work without disruption or financial hardship (Johnson, 1986). According to Natriello and Cohn (1983), recent reports on school reform argue that financial incentives are the key to recruiting and retaining excellent teachers. This has resulted in consideration of merit and incentive pay systems for teachers at the federal, state, and local levels. Johnson (1984) counters that, although, without question, teachers deserve higher salaries and must have financial security to remain in the profession, recent research suggests that incentive strategies should center on the workplace rather than on the pay envelope. Unless schools become places where teachers can teach, those who can leave the profession will leave.

Jung (1984, p. 7) defines incentive as "any commonly valued reward whose discovery is contingent on the attainment of some agreed-upon goal or standard." According to Johnson (1986), incentives can be derived from three theories of motivation. First, expectancy theory states that individuals will work harder if there is an anticipated reward, such as a bonus or a promotion, than if there is no reward. Second, equity theory states that individuals are

dissatisfied if they are unjustly compensated for their work. Third, job enrichment theory states that workers are more productive when their work is varied and challenging.

While the goal of any incentive system is to promote and maintain a certain level of behavior, to be performance-based, a reward can only be received when job performance has met or exceeded a predetermined standard (Jung, 1984). The current interest in merit or performance-based pay was precipitated by the decline in American productivity relative to Japan and other industrialized countries. The 1983 Gallup poll reported that 61 percent of American adults support merit pay for teachers. At the same time, the American School Boards Association reported that 62.7 percent of teachers agree that teachers should be compensated according to how well they perform in the classroom (Johnson, 1984). The effectiveness of performance-based pay rewards depends upon the value that teachers assign to the rewards themselves and on the credibility of the evaluation process upon which the rewards are based (Wise & Darling-Hammond, 1984).

Jung (1984) raises several questions regarding teaching excellence and performance-based pay. Can only a few teachers achieve excellence or can all achieve excellence? Does the system emphasize identification of a select few or improvement of all? Is excellent teaching considered primarily an individual activity or a team effort? Do the teaching processes of what teachers do constitute teaching excellence or are learner outcomes the measure of excellence? Is excellent teaching separable from its results?

The Carnegie task force states that incentives for teachers must be related to school performance. Schools must be provided with the technology, services, and staff essential to teacher productivity. Teachers' salaries and career opportunities must be competitive with those in other professions (Carnegie, 1986). Monetary incentives alone, however, will not attract and retain the most capable teaching candidates to education. Status, image, and community respect and recognition must be fostered, along with financial incentives (Gress et al., 1986).

Studies have shown that financial incentives can promote specific behaviors and direct teachers' efforts toward a measurable goal, but are not effective in improving general teaching performance. Teachers regard professional efficacy, not money, as the primary motivator in their work. Also, individual incentives may be less effective than shared incentives for school-wide performance and shared professional goals (Johnson, 1986).

Duttweiler (1986) states that the three highest ranked teacher incentives are not related to salary. The first is having input into policy making and participating in educational decision-making. The second is participating in curriculum development, working with other teachers, and developing and presenting workshops. The third is having more preparation time, more flexible scheduling, and top priority for summer work.

Basically, teachers have lacked the time required to develop and maintain academic excellence. Teachers, like students, must be provided more time for their primary tasks. Adequate preparation time is needed to implement recommended teaching practices.

Greater time and support also needs to be provided for professional development and enrichment programs. Longer teaching contracts would provide additional time for staff development and curriculum development programs (EETF, 1984).

Cresap et al. (1984) found several reasons to focus on teacher incentives. First, the educational work force is growing. Teaching positions will expand by half of the current teaching force in the next decade. Large numbers of teachers will retire during this period. At the same time, qualifications of students entering teacher education programs have fallen. Some positions, in areas such as mathematics, science, special education, and bilingual education cannot be filled with qualified candidates. The increasing pressure to make schools more effective will require improvements in teacher quality. Efforts to compensate for inadequate teachers, such as teacher-proof curricula, have not been successful. This reinforces the assumption that "teacher quality is the most powerful determinant of educational outcomes and progress will be made only to the extent that we can attract better people into teaching and keep them there" (Cresap et al., 1984, p. 1).

Although the mandate may come from the state level, the ideal level for implementing incentive plans is the local school district level. When the state exerts control, often only passive compliance is made in most districts. A better strategy is what Duttweiler (1986) calls the deregulated control model, in which the program is conceived and carried out by local school districts.

Johnson (1986) identifies three major classifications of incentive plans adopted in education and rationales for those plans.

Loan forgiveness and higher entry pay attract new and talented teachers. Merit or performance-based pay and career ladders provide financial incentives, varied work experiences, and career advancement opportunities for veteran teachers. Across-the-board pay raises, premiums for difficult teaching assignments, and grants for study are promises to right past wrongs.

Jung (1984) states that the goal of an incentive system is to promote and maintain a certain level of behavior. It is assumed that only a few teachers are or can be outstanding, but many more could be given more training and support. It is also assumed that most teachers are already capable of excellence and need only proper motivation to perform at peak level. "The most effective reward satisfies the most salient needs perceived by the potential recipient without producing negative side effects" (Jung, 1984, p. 12). Staff input on incentives should be solicited and both monetary and non-monetary incentives should be considered (Gress et al., 1986).

Cresap et al. (1984) discusses five categories of incentives that may be implemented by schools to attract, motivate, and retain qualified teachers. The first category is compensation, including merit pay and bonuses. They both reward teachers and meet specific needs in attracting and retaining teachers. Salary schedules and benefits can be modified in various ways in this area. The second category, career options, incorporates modifications in the traditional structure of the teaching career, including career ladders. The third category, enhanced professional responsibilities, increases teacher pay and makes the job more interesting by extending and varying teachers' responsibilities. Master teacher plans would fall

under this category. Non-monetary recognition is the fourth category, which includes awards and other means of motivating teachers through attention to their accomplishments. The fifth category, improved working conditions, makes teaching more professional and enjoyable, and therefore, more attractive.

Monetary incentives cover a broad spectrum of possibilities. Rewards or stipends can be paid in salary for extra or additional work assignments or responsibilities, such as extended contracts, department chairperson, curriculum writing, or project development and implementation. Salary is not the only monetary incentive available, nor is it the most important incentive for teachers. Teachers can receive payment for attending inservice sessions, providing staff development for others, or may be given paid time off to improve their professional competencies. Educational scholarships, forgivable loans, or grants can be awarded to permit teachers to acquire further education. Money can be made available for teachers to use for educational materials and activities or for classroom teaching materials. Teachers could receive payment for activities such as educational travel or for personal commitments that are not extra assignments. Incentives could be in the form of deferred benefits, such as extra retirement benefits (Koehler, 1992; Cresap et al., 1984; Gress et al., 1986; Jung, 1984).

In A Place Called School, Goodlad (1984) says that it is not economically feasible to pay attractive salaries to all teachers because of the labor-intensive character of teaching. He suggests an alternative of a distinction among assisting and apprentice teaching roles with more highly paid career teachers and head teachers.

The majority of teachers surveyed, however, prefer non-monetary incentives and wish to select incentives from a menu of options. Increased control by individual teachers over time and curriculum and recognition for teacher groups should be emphasized (Gress et al., 1986). Non-monetary incentives have a long history of use in education and should be continued and expanded (Jung, 1984). Non-monetary incentives that are meaningful to teachers include restructuring the school work environment so teachers have more involvement in school decision-making and more discretion in determining what and where to teach. Other incentives include release time for teacher projects, additional instructional materials, clerical help, options to work part-time, peer recognition, appointment to advisory boards inside and outside of education, and public or community recognition. Attention to non-monetary incentives and recognition for teachers can result in dividends in considerable excess of the time and financial investment required (Jeffries, 1994; Gress et al., 1986; Jung, 1984).

Assessment for Incentives

Merit pay, incentive pay, master teacher, and career ladder plans are viewed as methods for rewarding good teachers, providing career advancement opportunities, enforcing more accountability in teaching, and upgrading the quality of teaching. These proposals assume that differential rewards and sanctions will improve individual teaching and enhance the profession as a whole. They also assume that evaluation methods exist that can effectively and fairly differentiate among teachers. Studies of teacher evaluation practices

by Arnstine and McDowell (1993) and by Wise and Darling-Hammond (1984) show that neither of these assumptions is necessarily correct.

In the Education Report Card (1985), Robinson found three assessment methods for merit pay plans. The most common is teacher performance evaluation. Evaluation, however, has been unable to distinguish superior teaching from typical teaching. A second assessment area, evaluation of professional competence, is based on academic credentials, experience, and extra responsibilities. The problem that exists with this is that these areas have not been shown to be closely related to student learning. Educational productivity, the third assessment area, judges teachers by how much their students learn, as determined by test scores. It is difficult to determine what measure of student achievement would qualify a teacher for a superior rating. Walker and Zitterkopf (1994) suggest that assessment of teacher performance should be tied to a client oriented, achieving enhancing evaluation system that focuses on teacher accountability for identified student outcomes.

Failure to determine a fair method to evaluate a teacher's work has led to the demise of most past merit pay plans. The idea was tried in hundreds of school districts since the turn of the century, but nearly all have been abandoned (Education report card, 1985). Bureaucratic evaluation processes designed to make decisions about minimal competencies have limited validity for assessing relative competence and little utility to provide sound teaching advice because of a lack of evaluator expertise, the time-limited and fragmented format of teacher evaluation, and the rigidity of most

evaluation criteria (Wise & Darling-Hammond, 1984). The issues of validity and rater reliability complicate the evaluation process. A significant number of school districts that attempted and dropped merit pay for teachers cited difficulty in evaluating personnel and applying the criteria fairly as the primary reason for the failure of the plans (Johnson, 1986). Teacher support can sometimes be obtained, however, if the teachers have the opportunity to appeal their evaluations (Bennion, 1984).

Monk and Jacobson (1985) state that, with the exception of scarcity bonuses for some teaching areas and outcome-based merit plans which measure accomplishments through student test scores with adequate controls for external factors, suggested plans for rewarding teachers are already addressed, however inadequately, in present compensation systems. Such ideas as extended contracts, differentiated staffing, and peer teacher review represent modifications of existing practices rather than significantly new concepts.

Summary of Advantages and Disadvantages

Cresap et al. (1984) lists eight critical assessment factors that summarize the advantages and disadvantages of performance-based pay plans. The first assessment factor is the ability to attract and retain teachers. A possible advantage is that the opportunity to earn higher salaries for superior performance may attract higher quality candidates. Also, monetary rewards for performance may improve the morale and retention of superior teachers. A possible disadvantage is that some strong candidates and existing staff may

dislike the competitiveness of merit pay plans. The second assessment factor is the ability to motivate teachers. Rewarded teachers are likely to be more highly motivated, however, the morale of unrewarded teachers may decline.

The reasonableness of the cost of the performance-based pay plan is another assessment factor. The additional expenditures for merit pay rewards may be seen as justified if the results are substantial. A disadvantage is that costs may be high if quotas are avoided, a significant number of teachers qualify, and the monetary rewards are sufficiently large to be seen as worthwhile.

Another factor is the potential impact of the plan, or the general level of change that can be expected from applying the incentive. If a merit pay plan is fully implemented, adequately financed, and accepted by the teachers, it may be among the most effective of all incentive plans. Negative results may outweigh the positive if the rewards are insufficient or if destructive competition and jealously among teachers result from the plan design.

The importance of performance appraisal must also be assessed. An advantageous merit pay plan requires an effective performance appraisal system which will support performance improvement and provide a basis for dismissing incompetent teachers. The development of an effective performance appraisal system is difficult. If insufficient time and resources are devoted to developing a strong appraisal system, the incentive plan may lose the credibility and support of the teaching staff.

A very important assessment factor is the degree of change required to implement the plan or the extent to which a district

needs to change its organization, staffing, or procedures. An advantage may be that teachers are rewarded for concentrating on teaching. Additional roles and responsibilities for teachers would not be necessary. Significant changes in staff attitudes may be required for staff acceptance, however, because the emphasis on performance may represent a large shift for many school districts.

The ease of administration of the plan must also be assessed. Some versions of merit pay plans may be easier to administer than systems incorporating more complex structural changes. Also, if the performance appraisal system is sound, the decision-making required by the merit pay plan is straightforward. The administration and management of a complex performance appraisal system, however, can be demanding and require much administrative time and effort.

The last assessment factor is the likely acceptability of the plan to teachers and the community. The community will be supportive of performance-based pay if the plan attracts and retains better teachers and includes student outcomes. Teachers will be supportive if the plan accurately discriminates among differing levels of performance. The community may be opposed to the plan if it appears that more money is being spent for the same people and the same results. Teachers will be opposed to the plan if decisions regarding teacher performance are subjective, criteria are too narrow, and competition among teachers replaces collegiality.

In summary, proponents of merit pay for teachers believe that a performance-based pay system that rewards teachers for exemplary performance will improve the quality of teaching,

motivate teachers to do a better job, and attract and retain higher quality teachers in the profession. Opponents of merit pay believe that performance-based pay does not motivate teachers nor attract or retain quality teachers. They also believe that merit pay is not feasible because of the impossible task of adequately evaluating the quality of a teacher's performance. Teaching is a cumulative and a cooperative effort, which makes it difficult to assess the contribution of a single educator toward the end product of the outcome of a child's learning. Performance-based pay also tends to destroy or diminish the collegiality and cooperation that is vital to quality education in today's schools. Sifting the data available from the literature on merit pay leads to the conclusion that performance-based pay is not a viable or effective component in school improvement, unless incentives are provided on a school-wide basis for building goal attainment.

Developing Merit and Incentive Pay Systems

Cresap et al. (1984) lists obstacles to incentives for teachers and discusses ways of addressing those criteria. The first is the financial requirement for the incentive program. School districts must first determine and demonstrate benefits that are expected to be derived from the incentives. The cost of the incentive program must be lowered to the minimum acceptable point. Priorities must be set among all possible expenditures and funds reallocated accordingly. Also, the district should seek additional sources of funding whenever possible.

If performance appraisal is a part of the incentive program, the effectiveness of the district's performance appraisal system, including validity, reliability, and objectivity, may be an obstacle to teacher acceptance. The district must demonstrate that performance appraisal requirements are possible to achieve and have been achieved in other districts. If priority for the program is sufficiently high, the district will invest sufficient time and funds in its development effort to help insure the success of the program.

In some school districts, teacher opposition may be a stumbling block to acceptance of an incentive program. To guard against this, teachers must be included in all phases of planning, development, and implementation of any incentive plan. The plan should also be reassessed and modified periodically.

Administrative requirements may also present obstacles. Incentive plans should be simplified to the fullest extent possible. Costs of adequate administrative support must be calculated and necessary support must be guaranteed. Criteria for selection of administrators should be strengthened and all administrators should receive adequate training.

Incentive plans may impinge upon some collective bargaining situations. Districts must involve teachers in planning and development work prior to bargaining. After sufficient planning, the intended incentive plan should be introduced into the collective bargaining process. All potential benefits should be explained to teachers to safeguard against potential negative effects.

Legal requirements must also be considered when planning and developing incentive programs. District plans must be designed

to comply with relevant laws and regulations. If exemptions or changes are needed, collaboration with other school districts and state officials must occur.

Duttweiler (1986) concurs when outlining steps in planning and implementing an incentive program. First, the right people must be involved in the process. An incentive plan must be developed by those who benefit from the plan, those who will operate it, and those who will financially and politically support it. This includes teachers, administrators, school board members, parents, and community members. The right research must be conducted while planning the program. Programs that have been tried in other schools should be investigated. Teachers and administrators should be surveyed to discover what they will support in an incentive program. The goals of the incentive program should be well defined and a program must be developed to meet those goals. The specific incentives must be determined. Role definitions for teachers and administrators must be established and the school organization must be restructured to accommodate these role definitions, especially when developing career ladder programs. The performance evaluation system and management system must be developed and tested to be sure that they are compatible with the program goals. A process should be in place for evaluating the effectiveness of the incentive plan and revising it as needed. A strong staff development and inservice component must be incorporated into the program. A budget must be established and adequate funding sources identified to support the incentive program. Also, the plan must be reviewed regarding legality of its incentives and procedures. A communication process

for the plan should be established prior to the implementation of the program. A process must also be in place that provides for the evaluation and refinement of the program.

Jung (1984) discusses processes for evaluators to consider when evaluating the effectiveness of incentive programs. First, the stated program goals and the actual goals of the plan should be reasonably congruent. The hypothesized links between the intended inputs, activities, and outcomes of the program should be logically and empirically sound. Actual program inputs and activities should match the intended inputs and activities. Before any incentive program can be effectively evaluated, the program must have clear and acceptably stated goals, as well as implementation activities that are likely to accomplish those goals.

Natriello and Cohn (1983) list eight critical questions that need to be considered before implementing a merit pay proposal:

Question 1: Will the direction of implementation be top-down or bottom-up? Early and continued involvement of building administrators and teachers may be particularly important in the implementation of a reform, such as merit pay, which has substantial ramifications on the work lives of all concerned. Studies indicate that the involvement of local teachers and administrators is a key element in the success of any new program.

Question 2: Is the program implemented at the school, district, or state level? Because of local funding, the district level may continue to be the most likely level for performance-based pay plans. In large districts, experimentation at the school site level may be justified to serve populations with varying needs.

Question 3: Is the scope of teaching performance being considered limited or comprehensive in nature? Some merit pay plans include only a limited portion of overall teaching performance, such as classroom instruction as measured by student test scores. Other comprehensive plans consider the teacher's total contribution to the school and district, including such things as the teacher's general character and involvement in extra-curricular activities. At one end of the spectrum, critics claim that the plans represent a too limited view of teaching, while critics of the comprehensive package argue that the system is too intrusive on the lives of teachers.

Question 4: is the extent of eligibility of the performance-based pay plan restricted or is it available to the entire staff? Some merit pay plans restrict merit increments to a fixed percentage of the staff. Some mandate that merit pay be awarded only to those who rank clearly above the mean. Others permit all staff members to receive increments if they meet the predetermined criteria. A system that limits eligibility may promote morale problems if large numbers of teachers feel closed out of the merit process. On the other hand, a system that does not limit eligibility may price itself out of the realm of possibility.

Question 5: Should across-the-board increments be awarded? Some performance-based pay systems give teachers across-the-board salary increases independent of merit ratings. In some plans, the only increases teachers receive are those tied to merit ratings. The larger the proportion of increases tied to merit ratings, the stronger the impact of the merit system. If the system is not well designed, however, and if teachers do not perceive the evaluation

process as sound, performance and morale may be negatively affected.

Question 6: Does the system incorporate single or multiple levels of merit rating? In systems with a single merit level, it is relatively easy to designate teachers for merit awards and have most of the staff agree. It is only necessary to identify the stars. Systems with multiple levels of merit ratings require more subtle judgments. A sophisticated approach to evaluation must be in place. Evaluation criteria and standards must be consistent and all administrators must be specially trained in evaluation procedures and techniques. Teacher dissatisfaction can easily arise.

Question 7: Are the sizes of increments substantive or symbolic? Performance-based pay systems may operate with small symbolic raises if the system incorporates across-the-board raises and multiple levels of increments. A system with no across-the-board increase will need to have large increments to keep salaries competitive.

Question 8: Is knowledge of salaries and merit rewards private or public? If the evaluation system accurately reflects teacher performance to the satisfaction of most observers, making salary information public should lead to further confidence in the system. If this is not the case, and the perception is that evaluations do not accurately reflect performance, then publicizing the salary information will lead to further erosion of morale and trust.

Iowa Perspectives

The national concern about education has created concern in Iowa, a state where educational excellence has been taken for granted. The FINE report (First in the nation in education) stated, "At their best, Iowa schools approach excellence for some of their students. In the main, however, Iowa schools are falling short of providing the excellence for all students that will be required to ensure a bright future for them and for this state" (EETF, 1984, p. 7).

Although Iowa high school graduates go to college with a desire to learn, many are seriously under prepared in the areas of reading, writing, speaking, mathematics, and study skills. One-third of the college students surveyed believed that their high school teachers had expected too little of them. Although Iowa students' college entrance examination scores are traditionally among the top in the nation, they, like the nation, began a steady decline in the late 1960's that has only recently begun to turn around. This trend has been mirrored by the Iowa Tests of Educational Development (ITED) in grades 9 through 12 (EETF, 1984).

According to the FINE report, Iowans, especially parents, educators, business and industrial leaders, and labor must have high expectations and must insist upon excellence from the state's schools. It is necessary that procedures be developed and implemented that permit input on educational needs from these sources (EETF, 1984).

The FINE task force recommends that teaching be a full-time profession with full-time pay. The Iowa legislature should provide funding to extend teachers' contracts. This would allow assignments for the extended year in staff development, curriculum development,

year-round school, and other activities. A professional model should be developed for teachers, including higher salaries, processes to improve teacher competence, consideration of a career ladder, and increased involvement in decision-making at the local level (EETF, 1984).

In Iowa, teachers in 85 percent of the local school districts have chosen to bargain collectively. The FINE report (EETF, 1984) calls for reexamining Iowa's collective bargaining system in consideration for the professional teacher model recommended. This report states that a large segment of Iowa's teachers are capable and dedicated, but excellence will require stronger teacher preparation programs, stricter certification requirements, consideration of some type of differentiated pay system, and substantial pay increases for educators. In return, teachers must be expected to continually upgrade their knowledge and skills. If long term growth goals in education are to be achieved, teaching must be valued as a profession. Teachers' and administrators' dedication and achievement must be recognized and rewarded, both psychically and monetarily, if goals are to be reached (EETF, 1984).

The Iowa Business and Education Roundtable (1991, p. 13), in its report, World-class schools: The Iowa initiative, states that the proposal of a rewards system of incentive or performance-based pay for Iowa schools is not an alternative to a decent base salary for Iowa educators. An appropriate salary base is a matter of fundamental fairness to the state's educators for the job that they have done and are doing. The Roundtable also recommends that staff development must assume a larger role in Iowa's educational

system if effective restructuring is to occur. A restructured high-expectation, results-based educational system will require different assessment strategies. This will call for the retraining of virtually all Iowa educators so they can gain the new skills they need to fill substantially different capacities. Placing higher expectations on schools means that Iowa must equip its educators with new skills to make results happen.

While recommending a stronger state role in school reform, the FINE report recognizes that the nuts and bolts of school improvement occurs at the local level. This report further recommends that the state should provide additional and continuing support through the provision of financial aid and professional expertise to assist local school districts in the development, adoption, implementation, and evaluation of local programs designed to improve school effectiveness (EETF, 1984).

Phase III Educational Excellence Program

The Phase III Educational Excellence Program that the state of Iowa has implemented is aimed toward those goals. In the Phase III program rules, the Iowa Department of Education (1987, n. p.) states, "The goal of Phase III is to enhance the quality, effectiveness, and performance of Iowa's teachers by promoting teacher excellence. This will be accomplished through the development of performance-based pay plans and supplemental pay for additional instructional work assignments, which may include specialized training or differential training, or both." The legislative intent of the Phase III program is that local school districts will incorporate

recommendations from recently issued state and national reports into their performance-based pay and supplemental pay plans.

Farrar and Flakus-Mosqueda (1986) discuss several state sponsored school-wide improvement programs. School-wide improvement programs differ from other designs in that they do not advocate instructional or classroom management techniques that teachers are asked to master. Also, they do not include fixed, predetermined school standards. Instead, school-wide improvement programs outline a process that includes a series of steps leading to the identification of problems and the identification and implementation of solutions developed by the faculty of the school.

While a number of states have adopted school-wide improvement programs, some, such as Colorado and Pennsylvania have implemented mandatory plans, while others, such as Ohio, California, and Connecticut, offer incentives to entice participation in the programs. Iowa's Phase III plan falls into the latter category.

The 1987 Educational Excellence Act was designed to promote excellence in education and consists of three major phases. Phase I, designed to help recruit quality teachers, raised the beginning salary of Iowa teachers to $18,000. In the first three years of implementation, over $33 million was spent to maintain minimum educator salaries at this level. Funding for Phase I continues to stay near the first year level of spending. Established to help retain quality teachers, Phase II funds increased the salaries of experienced teachers. Over $38 million per year was spent in the first three years of implementation in this category. Beginning with the 1991-92 school year, Phase II allocations increased at the state allowable-

growth rate. The Phase III category was intended to enhance the quality, effectiveness, and performance of Iowa teachers through the development of supplemental and/or performance-based pay plans that rewarded teachers for additional work or superior performance (Iowa Department of Education, 1990).

According to the New Iowa Schools Development Corporation (1991), because of Phase III, Iowa is the only state which has financed decentralized educational reform. Through Phase III funding, the Educational Excellence Act has, since 1988, allocated $42.5 million annually for teacher differential pay, changing roles for teachers, accountability for student achievement, personalized teaching and learning, improvement of knowledge and skills of teachers, application of research to teaching, experiments in school-based decision-making, organizational innovation, enrichment programs for students, and in-service and professional development.

The Phase III program includes three categories of plans that may be developed by the local school district: a performance-based pay plan, a supplemental or incentive pay plan, or a comprehensive school transformation plan. Since Phase III is not a highly prescribed program, the high level of discretionary decision-making available to local school districts and AEA's has resulted in a wide variety of programming from site to site.

Section 284A.14 of the Code of Iowa (1988) defines performance-based pay as "a salary increase for teachers who demonstrate superior performance in completing assigned duties." Although there is considerable variance in the performance-based pay plan components among local districts, most performance-based

pay plans include rating systems, career ladders, point systems, individual teachers goals, group teacher goals, and site goals (NCREL, 1992).

The Iowa legislature defines supplemental pay for local school districts as "additional salary to teachers who participate in either additional instructional work assignments or specialized training during the regular school day or during an extended school day, school week, or school year" (Code of Iowa, 1988, Section 294A.14). The North Central Regional Educational Laboratory (NCREL) found that most plans base the supplemental pay on either additional instructional work assignments that focus upon curriculum development, teacher instructional activities, and student/parent centered activities or on specialized training that includes group or individual staff development activities or specific teacher projects (NCREL, 1992). According to the 1992 Annual Condition of Education Report (IDE), most school districts have seen an expansion of teachers' roles in the areas of peer coaching, mentoring new teachers, training colleagues, and collaborating with other educators since the implementation of the Phase III program. This report also states that, as a result of Phase III, teachers have become more effective in the classroom and have assumed new roles as instructional leaders, while student performance has improved

Iowa legislation states that a comprehensive school transformation plan "shall include, but is not limited to, providing salary increases to teachers who implement site-based decision making, building-based goal-oriented compensation mechanisms, or approved innovative educational programs, who focus on student

outcomes, who direct accountability for student achievement, accountability for organizational success, and who work to expand community or business relationships" (House File 2271, Section 3).

A study commissioned by the Iowa Department of Education (NCREL, 1992) reported that between 90 percent and 93 percent of Iowa's teachers have participated in Phase III activities. The typical teacher in the 1990-91 school year received just under $700 in additional pay from Phase III. The reasons most commonly cited by teachers for participating in Phase III activities included additional pay; the opportunity for collegial interaction with other teachers; curriculum improvement; improved teacher skills, knowledge, performance, and effectiveness; and increased student performance, interest, and motivation.

Summary

In summary, during the 1980's and into the 1990's, politicians, the business community, and the general public have indicated dissatisfaction with the current state of education in America. Areas of concern included declining achievement in reading, math, and science, especially when compared with other nations; a high rate of illiteracy; high drop out rates; and increasing effort and expense by business and the military to remediate deficiencies in such basic skills as reading, writing, spelling, and computation. The perception of the nation appears to be that education in the United States is failing because teachers have not done an effective job of educating America's children.

Educators, on the other hand, complain that they are not adequately rewarded in either dollars or prestige, especially when compared with professions that demand comparable education, training, and expertise and when compared with educators in other industrialized nations. They are expected to act like professionals but are not treated like professionals. Many teachers are leaving the profession at the same time that the best and the brightest of our nation's young people are not interested in entering the teaching profession (Carnegie, 1986; Cross, 1987; EETF, 1984; NCEE, 1984). Teachers also maintain that many forces beyond their control, stemming mainly from societal and cultural changes, are responsible for much of the decline in education.

Recommendations for achieving excellence in education have been generated by a multitude of state and national reports and committees. Most of these reports have included recommendations for the consideration or implementation of performance-based pay plans for teachers, espousing the theory that the opportunity to earn a higher salary based upon merit will result in teachers working harder and doing a better job. Research, however, seems to indicate that merit pay for teachers will not improve the quality of instruction and is doomed to fail, as it has during periods of America's history when performance-based pay was advanced in the past.

The Iowa legislature has implemented a legislative package aimed at meeting some of these needs. Phase I and Phase II of the package are aimed at improving teachers' salaries across-the-board. The intent of the Phase III part of the program is to provide funding

for local school districts to develop and implement performance-based pay plans, supplemental pay plans, and school transformation plans in Iowa school districts.

CHAPTER 3

Methodology

Introduction

The purpose of this study is to examine Iowa school superintendents' perceptions of the effects that Phase III performance-based pay and supplemental pay plans have had upon both teacher and student performance. A survey instrument (the Superintendent Perceptions of Phase III Survey) was developed by the researcher to measure superintendent perceptions. The research design, sampling procedure, population, instrumentation, and statistical analysis for the study are described in this chapter.

Research Design

A cross-sectional survey design (Borg & Gall, 1989) was utilized in this study. This cross-sectional survey collected standardized data from a sample drawn from the pre-determined population of Iowa school superintendents. Since the data collected measured the respondents' perceptions at a single point in time, namely the time when the questionnaire was administered, the study reported time-bound data.

The Dillman model of survey distribution was utilized to distribute and collect the questionnaires. The survey questionnaires were mailed to the respondents included in the sample. In an attempt to ensure that adequate data were obtained, after two weeks, nonrespondents were sent a postcard requesting their cooperation in completing and mailing back the survey. After two

more weeks, a second survey was mailed to the remaining nonrespondents with another request for their cooperation in completing the questionnaire. Surveys were numbered to determine which respondents had returned this survey. The numbering system was not used to identify respondents for any other purpose and the numbering list was destroyed upon completion of the sample.

Population

The population for this study included the superintendents of all of the public school districts within the state of Iowa. School superintendents are charged by Iowa law (Code of Iowa, 1988) with the responsibility of evaluating the effectiveness and performance of both staff and students. They are also responsible for the submission of final Phase III applications to the Iowa Department of Education on an annual basis, as specified in Phase III guidelines. School superintendents would, therefore, be in a position to have knowledge about the questions that this study examined and could be logical sources of data for the study.

Sampling Procedures

According to the Iowa Department of Education, there were 317 public school superintendents in the state of Iowa during the 1991-92 school year. For survey research, Borg and Gall (1989) suggest a sample size of from 20 to 100 subjects. Sudman (1976) suggests a sample size of 50 to 200 for regional institutional research, while Mari Kemis (personal communication, October 12,1993), from the Research Institute for Studies in Education,

suggests a sample size of 150 to 200 for this type of study. According to Smith and Glass (1987), the more homogeneous the population is with respect to the variable being estimated, the smaller the needed population. Given the relatively high degree of homogeneity for the population of superintendents of Iowa school districts, a sample size of 200 was utilized for this study.

A linear systematic sampling process (Borg & Gall, 1989) was utilized to select a sample of subjects for the study since all members in the defined population had already been placed on a list that was available from the Iowa Department of Education. The population of respondents was stratified, by district size, into three distinct groups: less than 1,000 students, 1,000 to 2,500 students, and more than 2,500 students. The number of superintendents sampled in each size category corresponded proportionately to the total number of Iowa public school superintendents in each size category. Male and female superintendents were included in the sample population in the same proportion that they were represented in the total population of Iowa public school superintendents.

Instrumentation

Instrumentation for the study consisted of a standardized questionnaire, Superintendent Perceptions of Phase III Survey, developed by the researcher. The survey included questions designed to rate superintendents' perceptions regarding the effect of Phase III plans on staff development, instruction, teaching performance, student performance, school restructuring and transformation, shared decision-making, and communication.

Questions were constructed that directly related to areas included in the Iowa Code (1988) outlining the intent, purpose, and function of Phase III performance-based pay and supplemental pay.

An examination of the legislative intent of H.F. 499 and Phase III application evaluation criteria yielded several areas that may be emphasized in Phase III plans. Section 8 of H.F. 499 (Code of Iowa, 1988) states,

> It is the intent of the general assembly that school districts and area education agencies incorporate into their planning for performance-based pay plans and supplemental pay plans, implementation of recommendations from recently issued national and state reports relating to the requirements of the educational system for meeting future educational needs, especially as they relate to preparation, working conditions, and responsibilities of teachers, including, but not limited to assistance to new teachers, development of teachers as instructional leaders in their schools and districts, using teachers for evaluation and diagnosis of other teachers' techniques...

Areas mentioned in the law and in Phase III guidelines that meet this intent include such things as curriculum planning, development, and articulation; improving attendance; staff development; improving student performance in academic achievement, study skills, thinking, and reasoning; site-based decision-making; focus on student outcomes; school restructuring/transformation; innovative educational programs; additional work assignments for teachers; and improvement of

teacher performance. The researcher-designed items included on the survey reflected questions about the different areas included under Phase III legislation and, in both prepilot and pilot situations, considered interview responses from administrators regarding content and construct validity and reliability, clarity, and relevance of the questionnaire items to general effects of Phase III.

The questionnaire consisted of 43 statements that respondents rated using a five-point Likert-type scale, plus four questions designed to gather demographic data about the respondent and the respondent's school district. Tittle and Hill, as reported by Borg and Gall (1989), compared the effectiveness of various types of attitude scales and found the Likert scale superior to other scale types for measuring attitudes and perceptions. Reliability and validity for the survey questionnaire was determined through the use of a pretest method of piloting the survey with a population sample, followed by personal interviews with the pilot respondents. These initiatives were used to pretest the survey to determine some measure of construct/content validity and reliability (Borg & Gall, 1989; Smith & Glass, 1987; Sudman, 1976). An analysis of pretest results determined if questionnaire items needed to be reconstructed, added, or deleted. This analysis also provided an opportunity to assess whether the methods planned for use in summarizing and quantifying data were satisfactory. Several school administrators volunteered to complete the survey in a prepilot format. Their input regarding the time and effort needed to complete the questionnaire provided useful information in determining the presentation format of the pilot instrument.

The reliability and validity of this instrument were addressed in several ways:

1. Construct validity. An analysis of the Iowa Code (1988), Department of Education documents, and individual school district Phase III plans resulted in the construction of questionnaire items that corresponded to components included in the Phase III legislation, guidelines, and plans. As previously noted, the Likert-type scale is considered to be a superior scale for the measurement of perceptions and attitudes, such as those measured by this instrument.

2. Content validity. Items making up each subscale of the instrument were specifically designed to be relevant to Phase III and the Phase III related items included in each section of the instrument. The analysis of survey items in the pilot activities was utilized to determine the content validity of the instrument.

3. Reliability. A covariance matrix was utilized to obtain the reliability coefficient alpha scores. The complete survey yielded an alpha score of 0.9601, which indicates that 96.01 percent of the criterion variables were accounted for or were predictable by a given set of predictor variables (Kachigan, 1986). When the seven clusters or questions were examined as separate groups, alpha scores ranged from a low of 0.759 to a high of 0.949. When used as a measure of reliability, the reliability coefficients, combined with the input from the pilot study, indicated that the survey questionnaire was a reliable instrument.

Survey Prepilot

A prepilot survey was administered to seven cooperating school administrators (including assistant superintendents, curriculum directors, and principals) who provided feedback regarding the time needed to complete the survey, clarity of the format of the survey, construct validity, and clarity and relevance of the questionnaire items. As a result of their feedback, the format and organization of the survey and several survey questions were modified.

Survey Pilot

In the survey pilot, six superintendents were randomly selected in a district size ratio that corresponds to district size parameters of the research design: one superintendent from a district of more than 2,500 students, two superintendents from districts with between 1,000 and 2,500 students, and three superintendents from districts with less than 1,000 students. The agreement of these superintendents to participate in the pilot study was solicited by phone and pilot surveys were mailed to them. The researcher then traveled to each school district and conducted a personal interview with each of the pilot superintendents to obtain information regarding the time needed to complete the survey, the clarity of the survey format and organization, and the clarity and relevance of the survey questions. The interviews included the following questions:

1. How much time did you need to complete this survey?
2. Were any of the questions confusing or not clear to you?

If so, which questions? What was not clear or confusing about the questions you noted?

3. Were the directions easily understood? If not, please explain.

4. Were there any items in the questionnaire that you did not want to complete or that were offensive to you? If so, please explain.

5. In your opinion, were any of the questions not related to the general effects of Phase III plans? If so, please explain.

6. Based upon this questionnaire, do you feel that this study may have significant relevance to the consideration of performance-based pay and supplemental pay plans, such as Phase III plans, by local school districts and/or state officials? If so, why?

7. Would you make any changes, additions, or deletions to this questionnaire? If so, please explain what changes you would make and why you would make them.

Data Analysis

Data obtained from the Superintendent Perceptions of Phase III Survey results were analyzed in several ways to test the null hypotheses. General frequency distribution data was used for Hypothesis 1 and Hypothesis 2. Perceptions of positive effect were noted by ratings of "Strongly Agree" or "Agree" on the questionnaire responses. Frequency distribution data provided a count of how frequently each value of each variable occurred. Frequencies and relative frequencies were utilized to note trends or tendencies of the ratings. A one-way analysis of variance (ANOVA) was used to compare results obtained from the survey to test whether the means

for subgroups of superintendent responses were significantly different for Hypothesis 3 and Hypothesis 4. The ANOVA was chosen over the MANOVA because the study examined differences between the means for single dependent variables. A MANOVA would be used for examining differences between the means for multiple dependent variables, which was not applicable to this study. A one-way ANOVA was utilized because this study looked at the differences between the means of groups for one independent variable and one dependent variable at a time. Any effects of the dependent variables were examined. Differences were considered significant at the .05 level of significance.

CHAPTER 4

Analysis of Data

Introduction

The goal of this study was to examine the perceptions of Iowa public school superintendents regarding the general effects of Phase III, as measured by the Superintendent Perceptions of Phase III Survey. This chapter provides a summary of the survey pilot and the survey responses, as well as an analysis of the data generated by the survey responses, the statistical measures used to test the hypotheses, and the reliability measures for the survey.

Pretest Results

The amount of time that the pilot superintendents needed to complete the survey ranged from less than 10 minutes to 30 minutes, with a mean time of 14 minutes. One superintendent reported taking 30 minutes to complete the survey. This superintendent completed the survey over a period of several days, answering a few questions each time, and felt that it was difficult to accurately measure the actual involved time. When this response was removed, the mean time to complete the survey was reduced to 11 minutes.

None of the pilot superintendents believed that any of the questions were confusing or not clear. All agreed that the directions were easily understood. There were no items on the questionnaire that any superintendent did not want to complete or were perceived as offensive to them. All of the pilot superintendents agreed that the

survey questions were all related to the general effects of Phase III on a state-wide basis, but did indicate that some individual questions might not necessarily relate to some individual school district Phase III plans. All agreed that, based upon the questionnaire, the study may have significant relevance to the consideration to performance-based pay and supplemental pay plans, such as Phase III, by local and state officials because the survey items reflected the areas of Phase III legislation related to performance-based pay and supplemental pay. Only one superintendent recommended that a change be made in the questionnaire. That change was to add a comprehensive school transformation category to question number 44 on the survey, which indicated the categories included in the respondent's district Phase III plan.

A review of the pilot interview results indicated that the survey could be completed in a reasonable time frame. The format, organization, and items included in the survey appeared to be clear and easily understood and the questions appeared to be relevant to the general effects of Phase III. The one recommended change, the addition of a comprehensive school transformation category to question number 44, was made to the survey.

Survey Procedures

Survey questionnaires, cover letters, postcards to request copies of the survey results, and self-addressed, stamped envelopes for returning the surveys were mailed to 200 randomly selected Iowa public school superintendents. Two weeks later, postcard reminders were mailed to those superintendents who had not

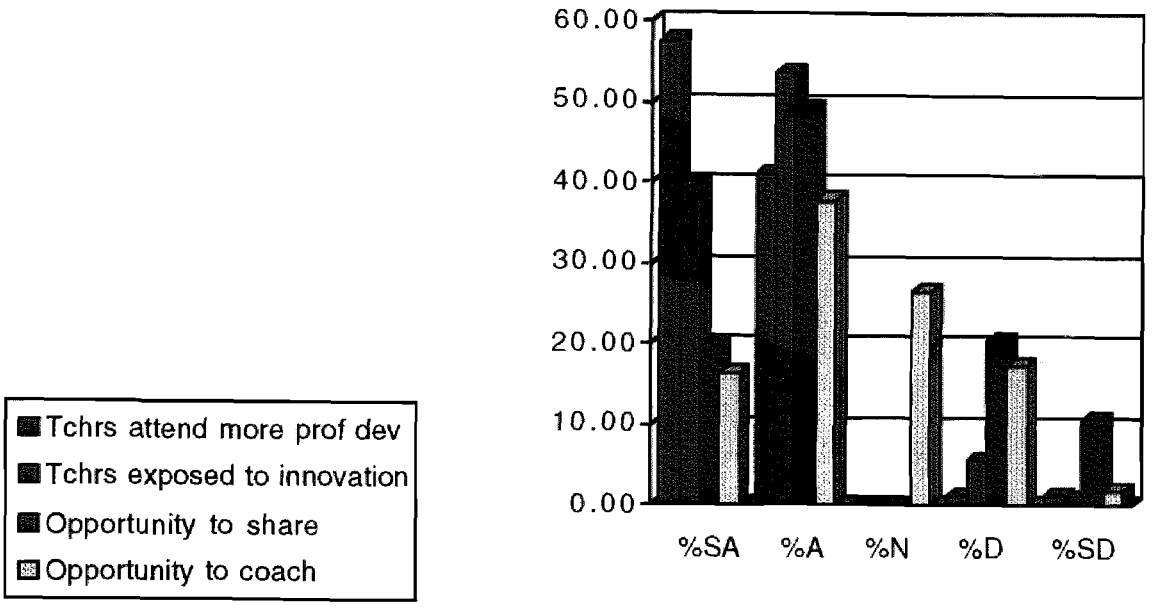
returned their questionnaires. After another two weeks had elapsed, new surveys, cover letters, postcards to request copies of the survey results, and self-addressed, stamped envelopes for returning the surveys were mailed to the remaining nonrespondents. Two weeks after that, the statistical analysis of the returned surveys was initiated. A total of 177 surveys were returned out of a total of 200 mailed, which yielded an composite return rate of 88.50 percent. In the stratified sample of school districts with less than 1,000 students, 126 surveys were returned out of 145, which yielded a return rate of 86.90 percent. In the stratified sample of school districts with a student population between 1,000 and 2,500, 36 surveys were returned out of 40, which yielded a return rate of 90.00 percent. In the stratified sample of school districts with more than 2,500 students, 15 surveys were returned out of 15, which yielded a return rate of 100.00 percent.

Statistical Analysis

In an examination of the responses to the survey items, frequency distributions were determined for the responses to each of the 43 questions contained in the survey questionnaire.

On the following pages, the data is displayed in graphic form to describe the frequency distribution of parts or all of the information described in the tables following the graphs. The information described in each table represents the responses to the cluster of survey questions for that section of the questionnaire.

Figure 2. Superintendent Responses to Staff Development Cluster of Survey Questions (Survey Questions 1-4) Reported by Percentage



In determining a numerical score for each item, the following numerical system was used:

- SA (Strongly Agree): 5
- A (Agree): 4
- N (Undecided): 3
- D (Disagree): 2
- SD (Strongly Disagree): 1

Table 2

Frequency Distribution Data for Superintendent Responses to Staff Development Cluster of Survey Questions (Survey Questions 1-4)

	% SA	% A	% N	% D	% SD	Mean	S.D.	Valid N
Staff Development								
Tchrs attend more prof dev	57.60	41.00	0.00	1.10	1.10	4.542	0.584	177
Tchrs exposed to innovation	40.10	53.70	0.00	5.60	0.60	4.333	0.609	177
Opportunity to share	19.80	49.20	0.00	20.30	10.70	3.78	0.887	177
Opportunity to coach	16.40	37.90	26.60	17.50	1.70	3.497	1.018	177

According to Thorndike (1982), the mean for a cluster of groups can be computed by calculating the mean of the mean scores of the different groups in the cluster. In this case, the cluster would be the total group of four questions in the staff development section of the survey. Superintendent responses to the individual questions would be the groups within the cluster. Utilizing Thorndike's method of calculating the mean of the mean scores for this cluster of superintendent responses to the survey items for the questions regarding professional development yielded a cluster mean score of 4.038. This appeared to indicate that Iowa school superintendents generally believed that Phase III had provided opportunities for teachers to be more involved in professional development opportunities.

Figure 3. Superintendent Responses to Instruction Cluster of Survey Questions (Survey Questions 5-7) Reported by Percentage

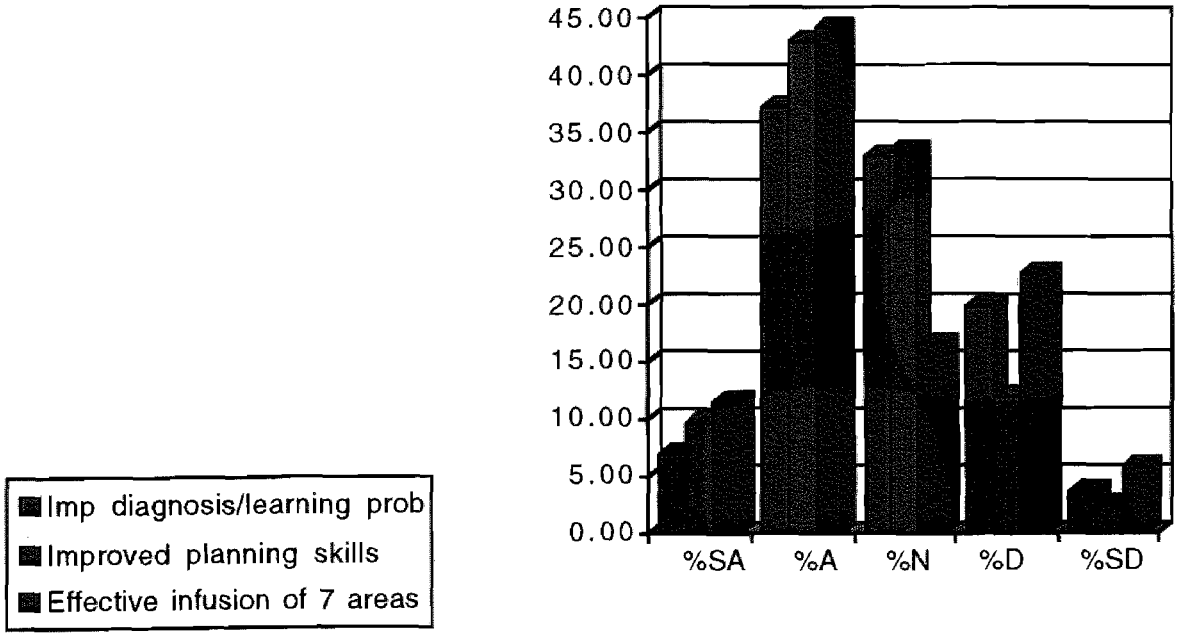


Table 3

Frequency Distribution Data for Superintendent Responses to Instruction Cluster of Survey Questions (Survey Questions 5-7)

	% SA	% A	% N	% D	% SD	Mean	S.D.	Valid N
Instruction								
Imp diagnosis/learning prob	6.80	37.30	32.80	19.80	3.40	3.243	0.961	177
Improved planning skills	9.60	42.90	33.30	11.90	2.30	3.485	0.904	177
Effective infusion of 7 areas	11.30	44.10	16.40	22.60	5.60	3.328	1.115	177

The mean of the mean scores for the survey items in the instruction cluster was 3.352, which placed the cluster mean score between the *Undecided* and *Agree* response categories. This appeared to indicate that superintendents perceived some improvement in instruction due to Phase III.

Figure 4. Superintendent Responses to Teaching Performance Cluster of Survey Questions (Survey Questions 8-12) Reported by Percentage

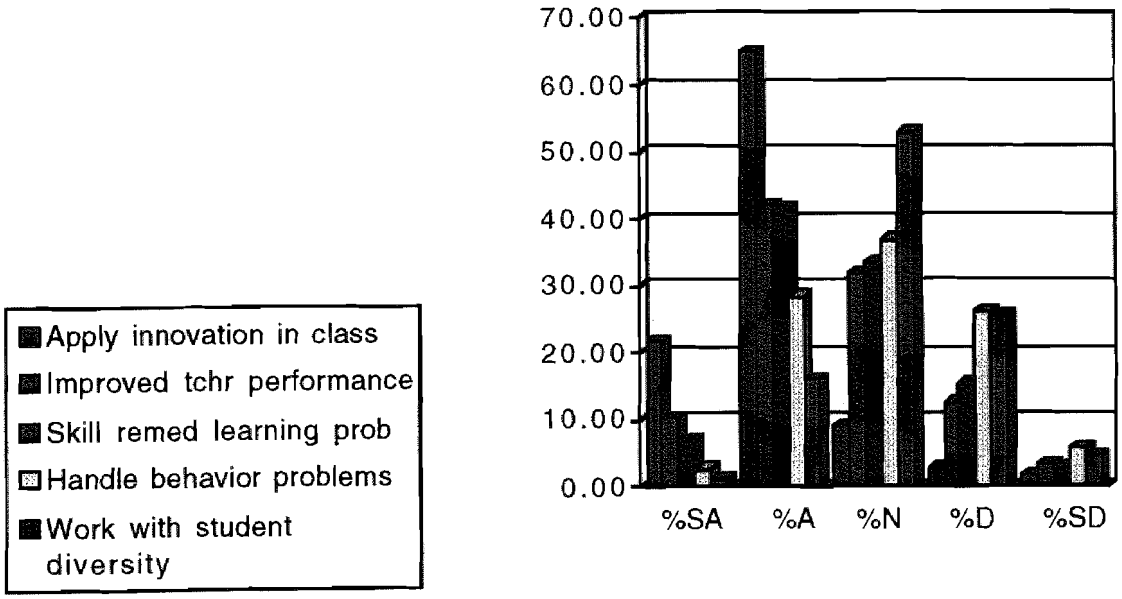


Figure 5. Superintendent Responses to Teaching Performance Cluster of Survey Questions (Survey Questions 13-17) Reported by Percentage

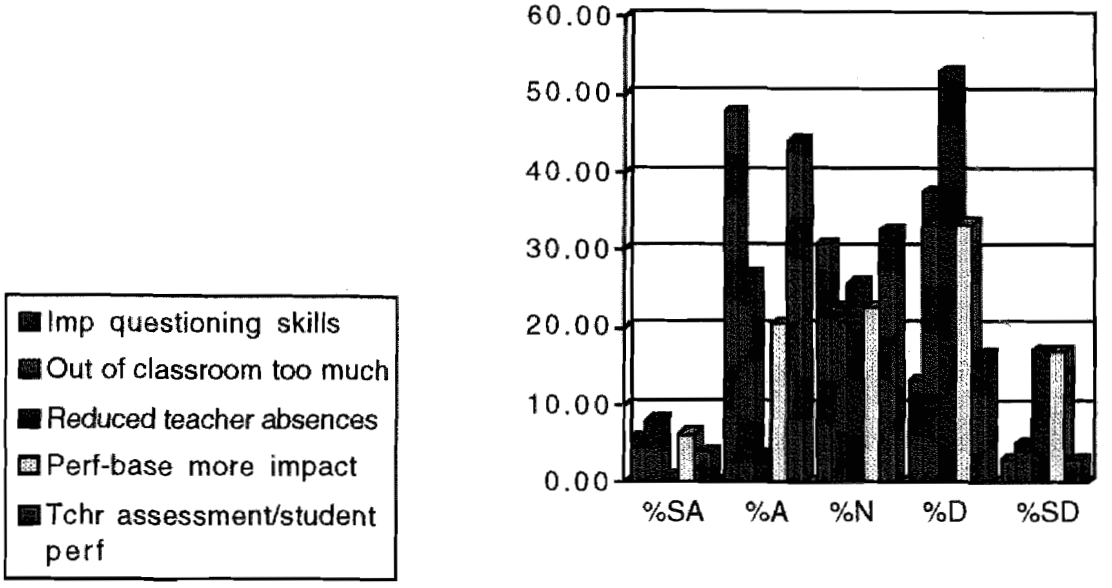


Table 4

Frequency Distribution Data for Superintendent Responses to Teaching Performance Cluster of Survey Questions (Survey Questions 8-17)

	%SA	%A	%N	%D	%SD	Mean	S.D.	Valid N
Teaching Performance								
Apply innovation in class	21.60	64.80	9.10	2.80	1.70	4.017	0.76	176
Improved tchr performance	10.20	42.00	31.80	12.50	3.40	3.432	0.954	176
Skill remed learning prob	6.80	41.50	33.50	15.30	2.80	3.341	0.918	176
Handle behavior problems	2.80	28.40	36.90	26.10	5.70	2.966	0.944	176
Work with student diversity	1.10	15.90	52.80	25.60	4.50	2.835	0.786	176
Imp questioning skills	5.70	47.70	30.70	13.10	2.80	3.403	0.889	176
Out of classroom too much	8.00	26.70	22.70	37.50	5.10	2.949	1.081	176
Reduced teacher absences	0.60	3.40	25.70	53.10	17.10	2.171	0.769	175
Perf-base more impact	6.30	20.50	22.70	33.50	17.00	2.653	1.166	176
Tchr assessment/student perf	4.00	44.00	32.60	16.60	2.90	3.297	0.892	175

The mean cluster score for the teaching performance cluster of survey items was 3.107, which placed this cluster mean at the *Undecided* rating, .107 above the 3.000 median score of the rating

scale. Individual item mean scores ranged from a high of 4.017 for "Apply innovation in the classroom" to a low of 2.171 for "Reduced teacher absences." While the responses to the individual survey items in this cluster appeared to indicate that superintendents' perceptions of the benefits of Phase III regarding general teacher performance were mixed, responses to items that related to direct student instruction indicated that superintendents believed that Phase III efforts have been more positive in the narrower areas of teacher performance that relate to direct student instruction. This was illustrated by mean scores for questions dealing with applying innovation in the classroom, improved teacher performance, skills at remediating learning problems, improved questioning skills, and teacher assessment of student performance all fell above the median rating. Means for questions dealing with handling of behavior problems, working with student diversity, teachers being out of the classroom too much, and reduced teacher absences all fell below the median rating.

Figure 6. Superintendent Responses to Student Performance Cluster of Survey Questions (Survey Questions 18-22) Reported by Percentage

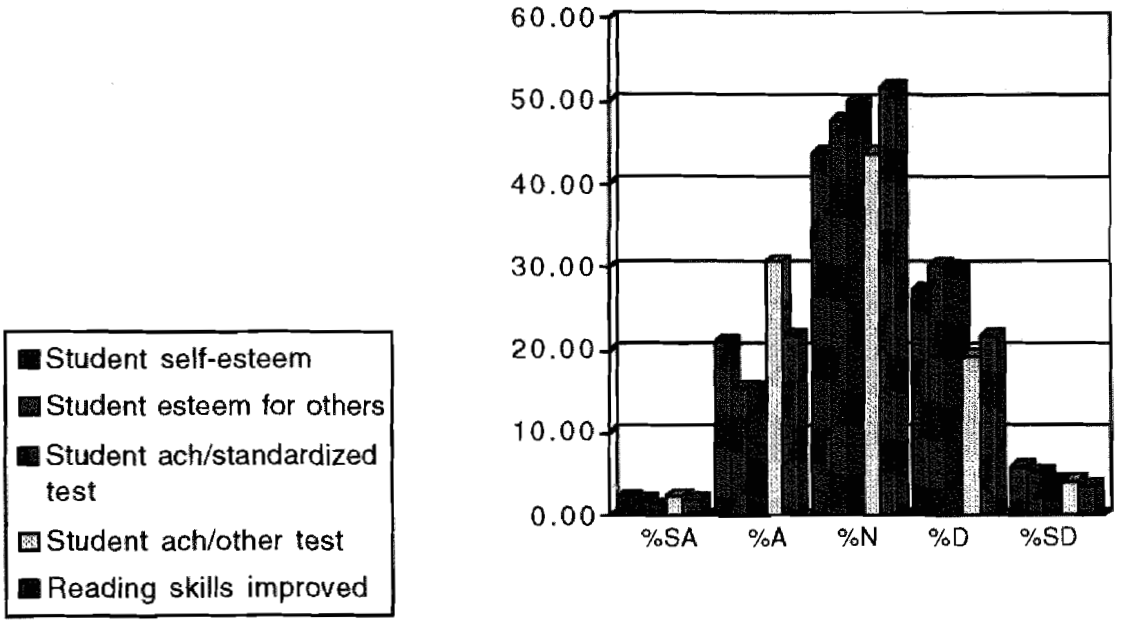


Figure 7. Superintendent Responses to Student Performance Cluster of Survey Questions (Survey Questions 23-25) Reported by Percentage

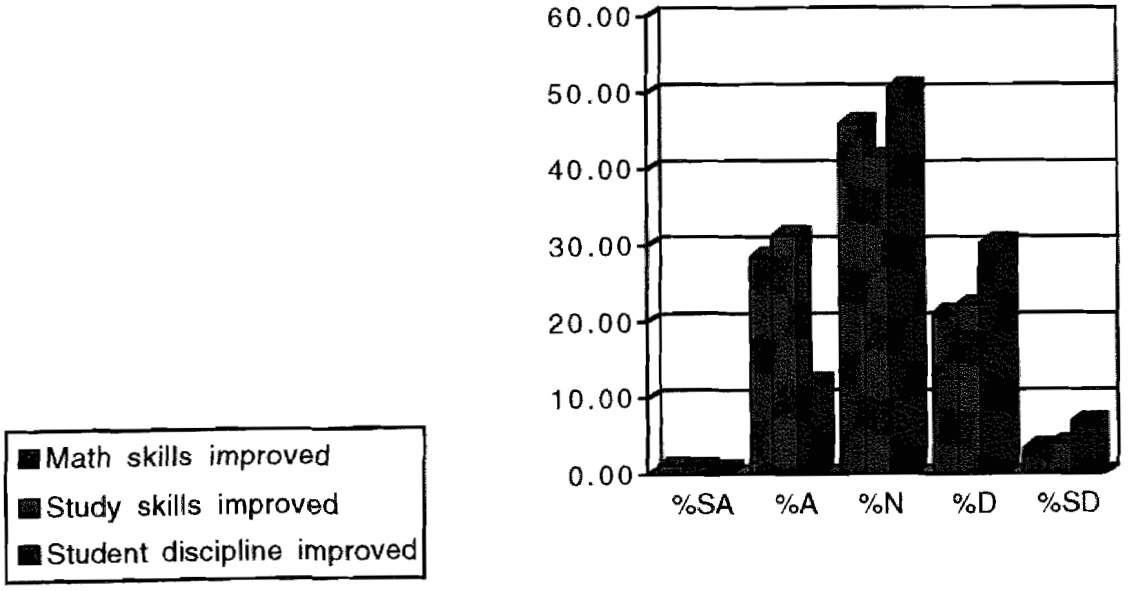


Figure 8. Superintendent Responses to Student Performance Cluster of Survey Questions (Survey Questions 26-28) Reported by Percentage

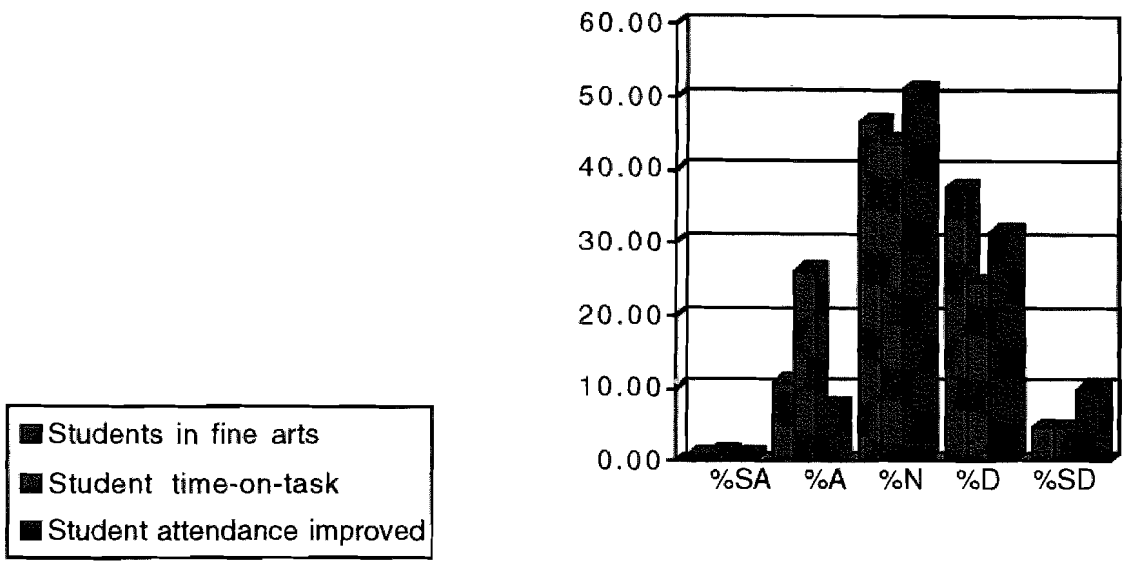


Table 5

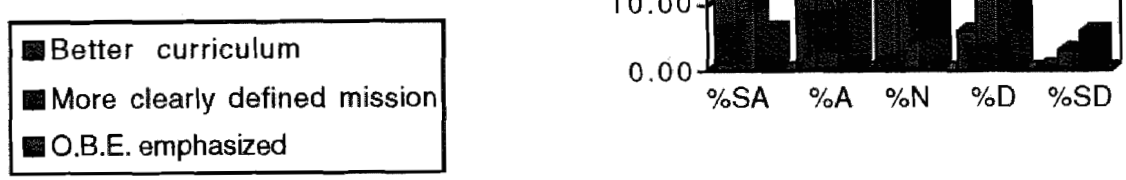
Frequency Distribution Data for Superintendent Responses to Student Performance Cluster of Survey Questions (Survey Questions 18-28)

	% SA	% A	% N	% D	% SD	Mean	S.D.	Valid N
Student Performance								
Student self-esteem	2.30	21.00	43.80	27.30	5.70	2.869	0.888	176
Student esteem for others	1.70	15.30	47.70	30.10	5.10	2.784	0.827	176
Student ach/standardized test	1.10	15.30	50.00	29.50	4.00	2.801	0.786	176
Student ach/other test	2.30	30.70	43.80	19.30	4.00	3.08	0.865	176
Reading skills improved	1.70	21.60	51.70	21.60	3.40	2.966	0.799	176
Math skills improved	1.10	28.40	46.00	21.00	3.40	3.028	0.824	176
Study skills improved	1.10	31.30	41.50	22.20	4.00	3.034	0.861	176
Student discipline improved	0.60	11.90	50.60	30.10	6.80	2.693	0.791	176
Students in fine arts	0.60	10.80	46.60	37.50	4.50	2.653	0.755	176
Student time-on-task	1.10	26.10	43.80	24.40	4.50	2.949	0.857	176
Student attendance improved	0.60	7.40	51.10	31.30	9.70	2.58	0.789	176

The cluster mean for the student performance cluster of survey responses was 2.857, which was .142 below the median possible rating of superintendent responses. The responses were generally

clustered around the median rating, which appeared to indicate that superintendents were undecided about Phase III affecting student performance in the areas noted on the survey.

Figure 9. Superintendent Responses to School/District Development Cluster of Survey Questions (Survey Questions 29-31) Reported by Percentage



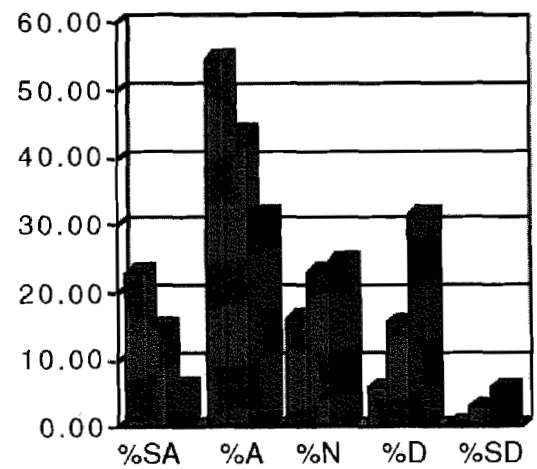
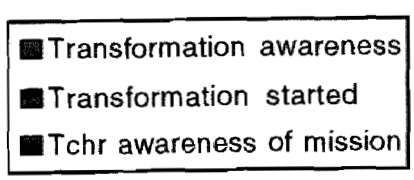


Figure 10. Superintendent Responses to School/District Development Cluster of Survey Questions (Survey Questions 32-34) Reported by Percentage



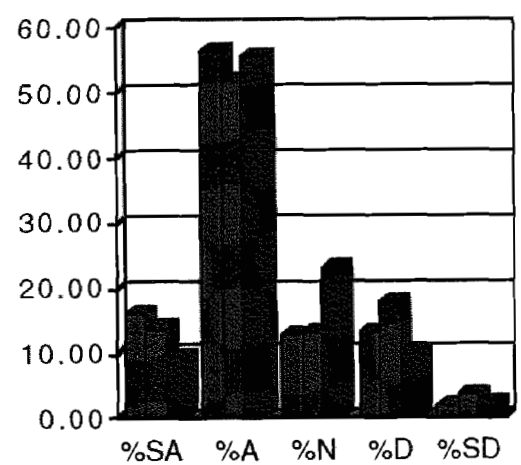


Table 6

Frequency Distribution Data for Superintendent Responses to School/District Development Cluster of Survey Questions (Survey Questions 29-34)

	% SA	% A	% N	% D	% SD	Mean	S.D.	Valid N
School/District Develop								
Better curriculum	23.00	54.60	16.10	5.70	0.60	3.937	0.82	174
More clearly defined mission	14.90	43.70	23.00	15.50	2.90	3.523	1.018	174
O.B.E. emphasized	6.30	31.60	24.70	31.60	5.70	3.011	1.059	174
Transformation awareness	16.10	56.30	12.60	13.20	1.70	3.718	0.947	174
Transformation started	13.80	51.70	13.20	17.80	3.40	3.546	1.046	174
Tchr awareness of mission	9.20	55.70	23.00	9.80	2.30	3.598	0.873	174

The mean for the school/district development cluster was 3.555, which fell slightly above the mid-point between the *Undecided* rating and the *Agree* rating. This appeared to indicate that superintendents perceived that Phase III has had a positive effect upon school and district development efforts.

Figure 11. Superintendent Responses to Decision-Making Cluster of Survey Questions (Survey Questions 35-36) Reported by Percentage

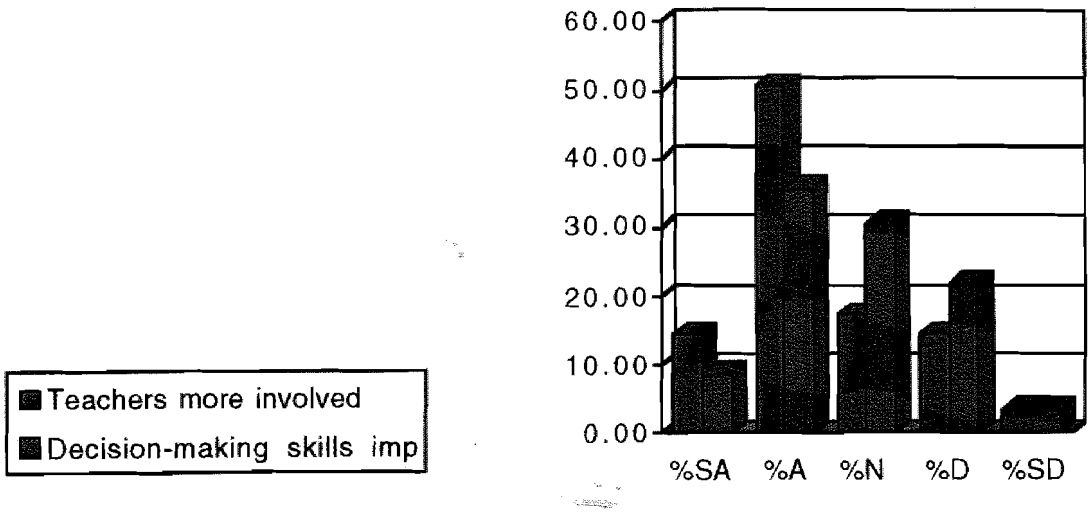


Table 7

Frequency Distribution Data for Superintendent Responses to Decision-Making Cluster of Survey Questions (Survey Questions 35-36)

	% SA	% A	% N	% D	% SD	Mean	S.D.	Valid N
Decision-Making								
Teachers more involved	14.40	50.60	17.20	14.40	3.40	3.58	1.015	174
Decision-making skills imp	8.60	35.60	30.50	21.80	3.40	3.241	1.002	174

The cluster mean for the two items in the decision-making cluster of survey items was 3.410, which placed this mean at the mid-point between the *Undecided* and the *Agree* responses. This appeared to indicate that superintendents believed that Phase III has had a somewhat positive effect upon teachers' decision-making skills and their involvement in the decision-making process. When responses to the two items in this cluster were examined individually, however, it was noted that the mean for the item that reflected teachers' increased involvement in decision-making was 3.580, with 65 percent of the responses in the *Strongly Agree* and *Agree* ratings, which appeared to indicate that superintendents believed that Phase III has had a very positive affect in this area. Superintendent responses to the survey item that dealt with whether teachers' decision-making skills have improved reflected a mean of 3.241, with 87.9 percent of the responses in the *Agree* to *Disagree* range. An examination of these results appeared to indicate that superintendents believed that Phase III has resulted in teachers being more involved in the decision-making process, without an improvement in the teachers' decision-making skills.

Figure 12. Superintendent Responses to Communication Cluster of Survey Questions (Survey Questions 37-40) Reported by Percentage

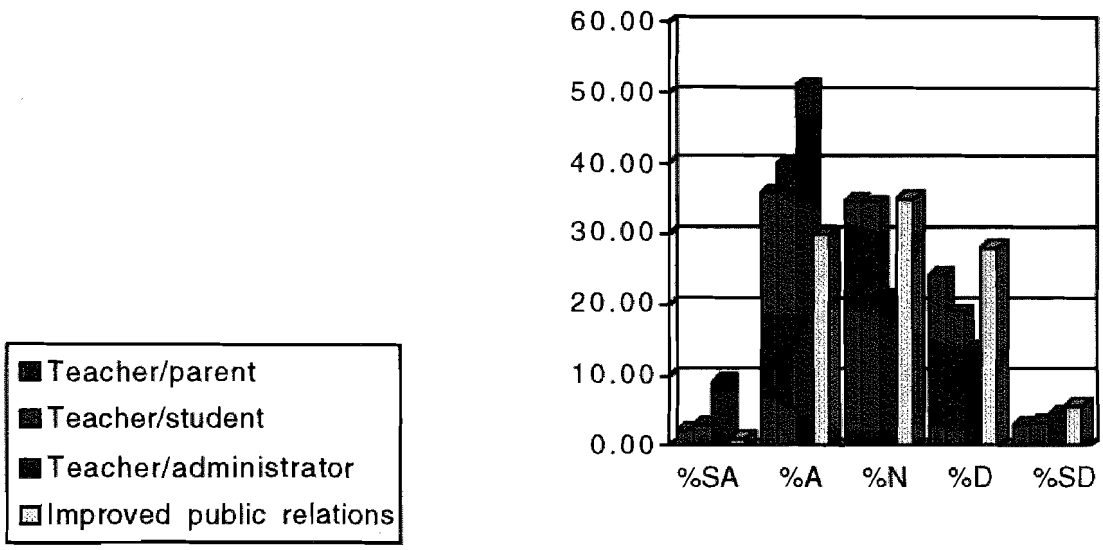


Figure 13. Superintendent Responses to Communication Cluster of Survey Questions (Survey Questions 41-43) Reported by Percentage

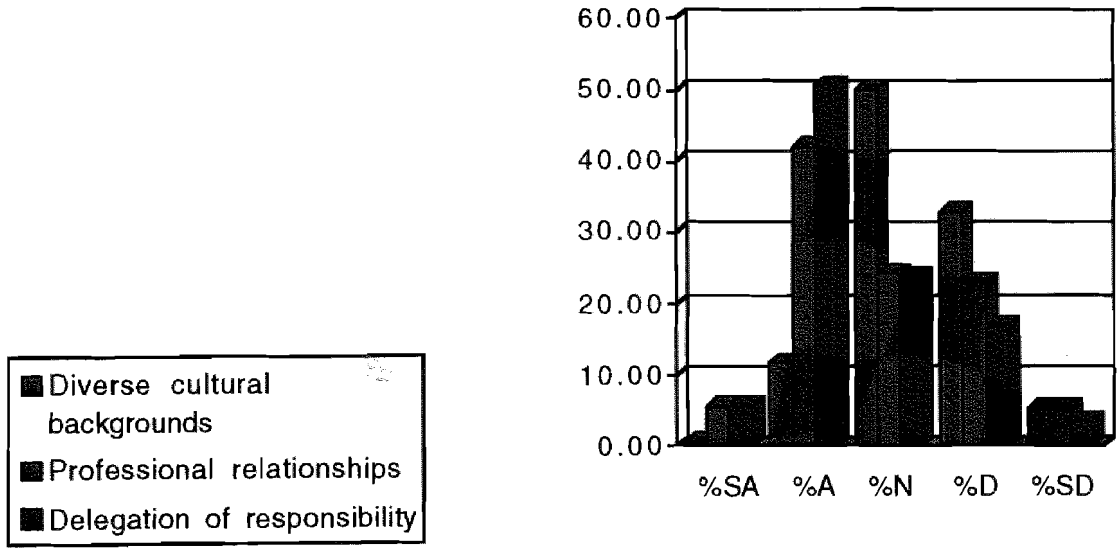


Table 8

Frequency Distribution Data for Superintendent Responses to Communication Cluster of Survey Questions (Survey Questions 37-43)

	% SA	% A	% N	% D	% SD	Mean	S.D.	Valid N
Communication								
Teacher/parent	2.30	35.80	34.70	24.30	2.90	3.104	0.896	173
Teacher/student	2.90	40.20	34.50	19.00	3.40	3.201	0.899	174
Teacher/administrator	9.20	51.10	21.30	13.80	4.60	3.466	0.995	174
Improved public relations	1.10	29.90	35.10	28.20	5.70	2.925	0.925	174
Diverse cultural backgrounds	0.60	11.50	50.00	32.80	5.20	2.695	0.764	174
Professional relationships	5.70	42.00	24.10	23.00	5.20	3.201	1.026	174
Delegation of responsibility	5.70	50.60	23.60	16.70	3.40	3.385	0.947	174

The cluster mean for the section of survey responses involving communication was 3.139, which was .139 above the mid-point score. This appeared to indicate that superintendents were undecided about the effect of Phase III on teacher communication when the cluster mean was considered. Responses to the items dealing with communication between teachers and administrators and with delegation of responsibility appeared to denote a more positive response than the other items in this cluster.

Reliability Coefficients

A covariance matrix, a widely accepted conventional measure of reliability, was utilized to obtain the reliability coefficient alpha scores. When the researcher examined the 43 questions included in the survey as one group, an alpha score of 0.960 was determined. When the seven clusters of questions were examined as separate groups, alpha scores ranged from 0.759 for the Teacher Performance cluster to 0.949 for the Student Performance cluster. This indicated that in the lowest scoring cluster, Teacher Performance, 75.95

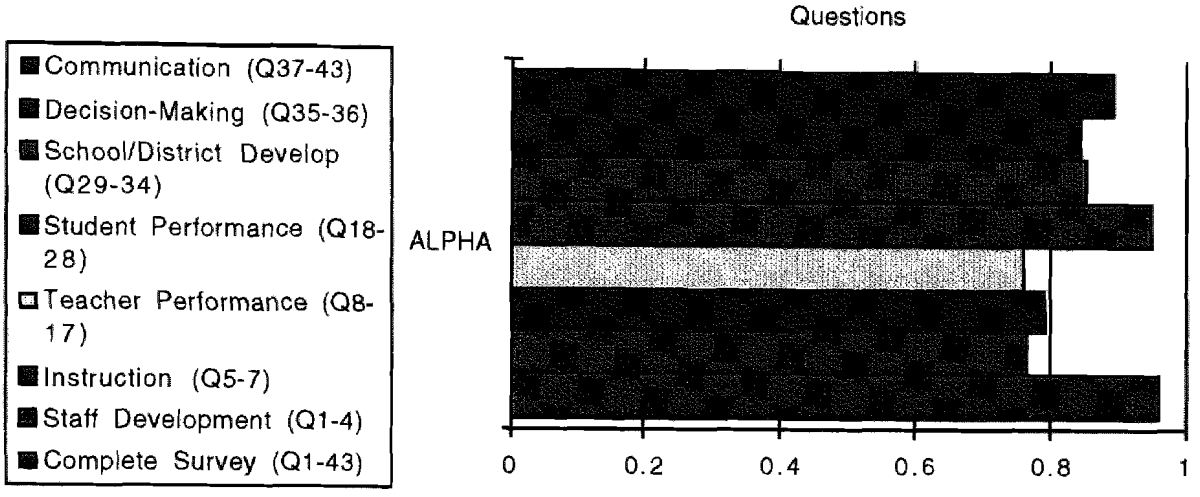
percent of the criterion variables were accounted for or predictable by a given set of predictor variables (Kachigan, 1986). The other clusters, with higher reliability coefficients, displayed higher predictability. When all 43 questions were analyzed as one group, 96.01 percent of the variables were predictable. When used as a measure of reliability, the reliability coefficients, in combination with the input from the pilot study, indicated the survey questionnaire was a reliable instrument. The clusters also were reliable in terms of measuring items of a similar concept.

The following reliability coefficients were obtained for the questions included in the survey questionnaire:

Table 9
Reliability Coefficients for Survey Questions Reported by ALPHA Scores

Questions	ALPHA
Complete Survey (Q1-43)	0.9601
Staff Development (Q1-4)	0.7623
Instruction (Q5-7)	0.7915
Teacher Performance (Q8-17)	0.7595
Student Performance (Q18-28)	0.9498
School/District Develop (Q29-34)	0.8521
Decision-Making (Q35-36)	0.8421
Communication (Q37-43)	0.8941

Figure 14. Reliability Coefficients for Survey Questions as Reported by ALPHA Scores



Differences by District Size

The following table summarizes superintendent responses regarding reported district size:

Table 10
Superintendent Responses According to Reported School District Size Reported by Number and Percentage

District Size	% of Total	Valid N
Less than 1000 Students	70.30	123
1000 - 2500 Students	21.70	38
More than 2500 Students	8.00	14
No Response		2

The survey responses were analyzed according to district size, utilizing a one-way analysis of variance (ANOVA). Differences were considered significant at the .05 level. The analysis of data showed

only two survey items with F probability scores at the predetermined level of significance, which indicated that superintendents from different size school districts differed significantly in their responses to only two survey items.

Table 11

Means of Superintendent Responses to Survey Question #15 According to Reported School District Size

Question	District Size	N	Mean	F Probability
Reduced teacher absences	<1000 Students	121	2.206	
	1000-2500 Students	38	1.921	
	>2500 Students	14	2.500	
Total		173	2.167	0.0324

According to the range test, superintendents in districts of more than 2500 students disagreed less that teacher absences are reduced as a result of Phase III activities.

Table 12

Means of Superintendent Responses to Question #35 According to Reported School District Size

Question	District Size	N	Mean	F Probability
Tchrs more involved in decision-making	<1000 Students	120	3.491	
	1000-2500 Students	38	3.631	
	>2500 Students	14	4.214	
Total		172	3.581	0.0396

According to the range test, superintendents from districts of more than 2500 students reported a higher agreement that Phase III has resulted in teachers being more involved in decision-making.

The analysis showed only two survey items that indicated significant differences in responses by district size. Because of the number of tests run (43), getting significance for these two items could have been due to chance. Only 5 percent of the items indicated significant differences, while 95 percent did not indicate significant differences in response means. Since these two items comprise such a small proportion of the total test items, chance could have accounted for levels of significance indicated by the data analysis.

Differences by Phase III Category

The following table summarizes superintendent responses regarding reported Phase III category components:

Table 13
Categories of School Districts' Phase III Plans (Performance-Based Pay Only, Supplemental Pay Only, Combination of Performance-Based Pay and Supplemental Pay, and/or Comprehensive School Transformation as Reported by Superintendent Responses

Performance-Based Pay, Supplemental Pay, or Combination in Phase III Plan	**%**	**Valid N**
Performance-Based Pay Only	3.0	5
Supplemental Pay Only	34.9	59
Combined Performance-Based/Supplemental Pay	62.1	105
Not reported		8

Comprehensive School Transformation in Phase III Plan	%	Valid N
Included in district plan	28.9	50
Not included in district plan	71.1	123
Not reported		4

The responses to the survey questions were analyzed according to reported school district Phase III plan category, utilizing a one-way analysis of variance (ANOVA). Differences were considered significant at the .05 level. The resulting analysis indicated only two survey items with F probability scores at the predetermined level of significance, which indicated that responses from superintendents from school districts with Phase III plan categories differed significantly on only two survey items.

Table 14

Means of Superintendent Responses to Question #2 According to Reported School District Phase III Plan Category

Question	Phase III Plan	N	Mean	F Probability
Tchrs exposed to more innovation	Perf-Based only	5	4.200	
	Supplemental only	59	4.525	
	Combination	105	4.228	
Total		169	4.331	0.0101

According to the range test, superintendents in districts with only supplemental pay in their Phase III plans agreed more than superintendents in districts with only performance-based pay or with a combination of supplemental and performance-based pay that Phase III has resulted in teachers being exposed to more innovation.

Table 15

Means of Superintendent Responses to Question #1 According to Reported School District Phase III Plan Category

Tchrs attend more prof dev	Perf-Based only	5	4.400	
	Supplemental only	59	4.694	
	Combination	105	4.466	
Total		169	4.544	0.0484

According to the range test, superintendents in districts with only supplemental pay in their Phase III plans agreed more than superintendents in districts with a combination of supplemental and performance-based pay that Phase III has resulted in teachers attending more professional development opportunities.

The analysis showed only two survey items that indicated significant differences in responses by Phase III categories. Because of the number of tests run (43), getting significance for these two items could have been due to chance. Only 5 percent of the items indicated significant differences, while 95 percent did not indicate significant differences in response means. Since these two items comprise such a small proportion of the total test items, chance could have accounted for levels of significance indicated by the data analysis.

Hypotheses Testing

Phase III legislation was enacted to provide additional pay for teachers to improve their knowledge and skills to help promote excellence in education. This was to be accomplished through

providing supplemental and performance-based pay to teachers. The hypotheses were developed to examine whether Iowa school superintendents perceived that Phase III supplemental and performance-based pay had accomplished this legislative goal in Iowa.

Four null hypotheses were tested.

Ho_1: Based on superintendents' perceptions, Phase III supplemental pay and performance-based pay have no effect upon student and teacher performance.

Ho_2: Based on superintendents' perceptions, Phase III plans that contain performance-based pay components have no different effect than those Phase III plans that do not contain performance-based pay.

Ho_3: Superintendents from small, medium, and large school districts will report no significant difference in perceptions regarding the effect of Phase III upon teacher and student performance.

Ho_4: Superintendents from school districts that have only performance-based pay, only supplemental pay, or a combination of performance-based pay and supplemental pay in their Phase III plans will not differ in their perceptions of the effect of Phase III upon teacher and student performance.

Null Hypothesis 1

Frequency distribution data were examined and analyzed to test null hypothesis 1. Responses to the survey items were assigned weighted numerical ratings ranging from a rating of *5* for *Strongly Agree* to a rating of *1* for *Strongly Disagree*. *Strongly Agree* responses (*5*) were considered to be the most positive, while *Strongly Disagree* responses (*1*) were considered to be the least positive.

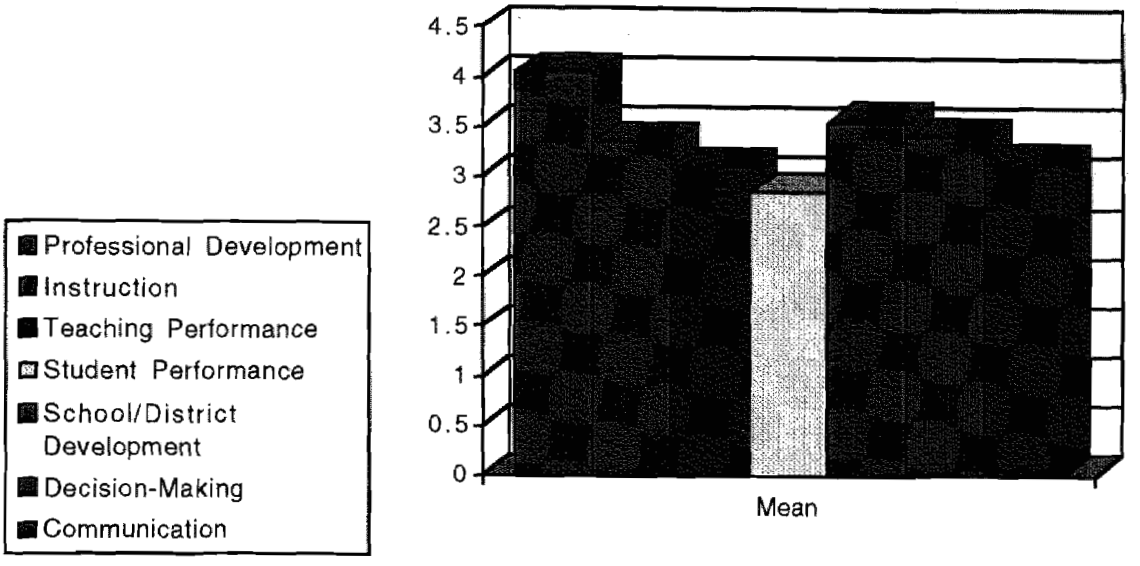
Cluster means for the responses are listed in the following table:

Table 16
Mean Scores of Superintendent Responses for Survey Question Topic Clusters

Cluster	Mean
Professional Development	4.038
Instruction	3.352
Teaching Performance	3.107
Student Performance	2.857
School/District Development	3.555
Decision-Making	3.410
Communication	3.139

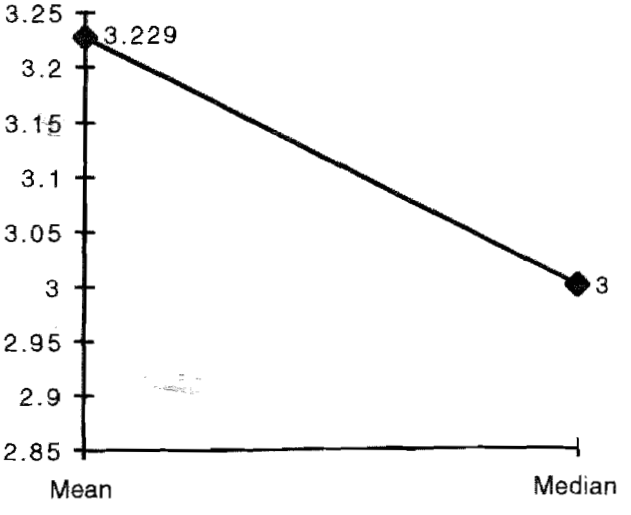
These mean scores are represented in the following chart:

Figure 15. Mean Scores of Superintendent Responses for Survey Question Topic Clusters



Since a rating of *3* was the median rating on the five point rating scale, scores greater than *3* were considered to indicate positive perceptions by superintendents, while scores less than *3* were considered to indicate negative perceptions by superintendents.

Figure 16. Composite Mean of Superintendent Responses for Total Survey (Survey Questions 1-43) Compared to Median Score of Possible Response Rating



When all 177 surveys were examined, the computed mean of the mean scores for the 43 survey questions was 3.229. In examinations of frequency distribution, Thorndike and Hagen (1977) state that when the arithmetic mean is higher than the median, the set of scores is positively skewed. As shown in the preceding table and chart, the mean of 3.229 was higher than the median of 3.000, which would indicate that Iowa superintendents perceptions of the general effects of Phase III showed a positive trend.

When the cluster means were examined, only the student performance cluster mean was below the median score. The student performance mean of 2.857 was .143 less than the median. The other six cluster means ranged from 3.107 to 3.555, which placed them from .107 to .555 greater than the median. These results support that superintendents perceived that the general effects of Phase III has been positive.

Based on the results of the study analyses, one can reject Null Hypothesis 1.

Null Hypothesis 2

Superintendent responses to item number 16 of the survey questionnaire were examined to test null hypothesis 2. This item stated "Phase III plans that contain performance-based pay have more impact upon teacher performance than Phase III plans that contain only supplemental pay."

Table 17
Superintendent Response Frequency Data for Survey Question #16

Response	Frequency
Strongly Agree	11
Agree	36
Undecided	40
Disagree	59
Strongly Disagree	30

Figure 17. Superintendent Response Frequency Data for Survey Question #16 Reported by Response Frequency

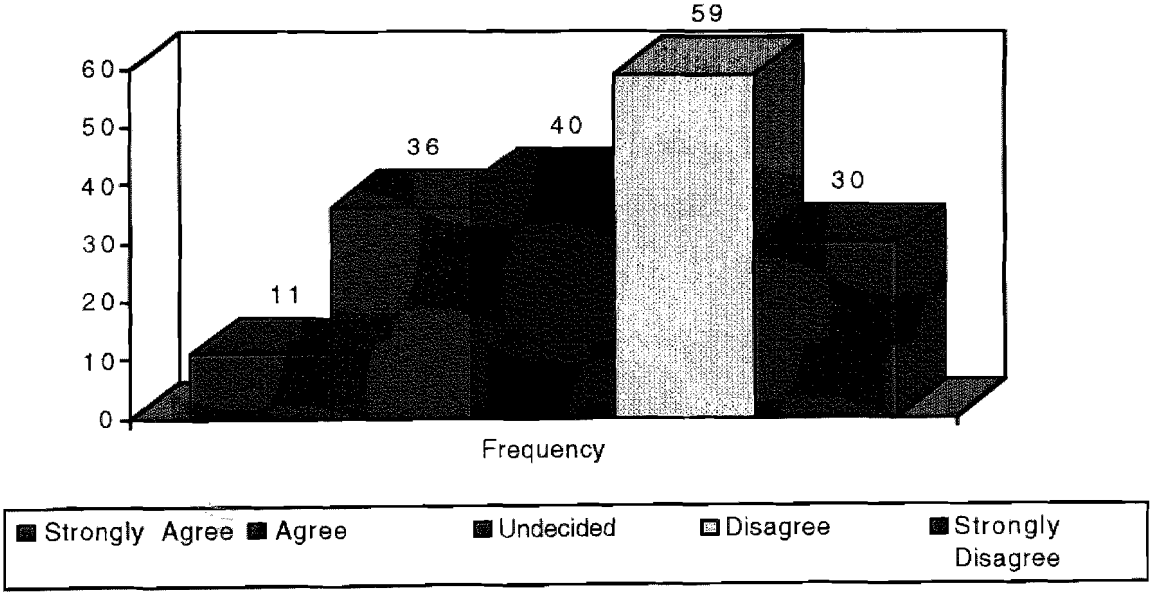
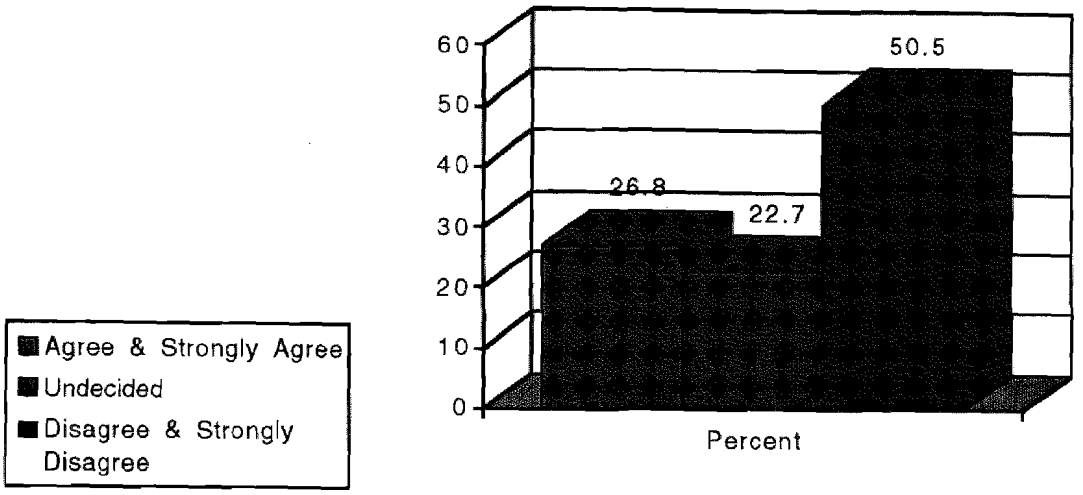


Figure 18. Superintendent Response Frequency Data for Survey Question #16 Reported by Percentage



The data described in the preceding table and chart indicated that 22.7 percent of the superintendents were undecided, 26.8 percent agreed or strongly agreed, and 50.5 percent disagreed or strongly disagreed. The mean score was 2.653, which was .347 below the possible median of 3.000 and would indicate that superintendents did not perceive that Phase III plans containing performance-based pay have a greater positive effect upon teacher performance than plans without performance-based pay. The data for Item 16 showed that 50.5 percent of superintendents did not believe that Phase III plans that contain performance-based pay have a greater positive effect upon teacher performance than plans without performance-based pay. Only 26.8 percent believed that Phase III plans that contain performance-based pay have a greater effect than plans without performance-based pay while 22.7 percent

were undecided. Based on the analysis of the results, the study fails to reject Null Hypothesis 2.

Null Hypothesis 3

A one-way analysis of variance (ANOVA) according to district size was utilized to test null hypothesis 3. Differences were considered significant at the .05 level of significance. The analysis showed only two survey items with F probability scores at the predetermined level of significance.

Table 18

Means of Superintendent Responses to the Two Survey Questions that Showed a Significant Difference in Responses by Reported School District Size at the .05 Level of Significance

Question	District Size	N	Mean	F Probability
Reduced teacher absences	<1000 Students	121	2.206	
	1000-2500 Students	38	1.921	
	>2500 Students	14	2.500	
Total		173	2.167	**0.0324**
Teachers more involved in decision-making	<1000 Students	121	3.491	
	1000-2500 Students	38	3.631	
	>2500 Students	14	4.214	
Total		172	3.581	**0.0396**

Utilization of the Duncan procedure to test for differences showed significant differences on responses to survey item number

15, which states, "Phase III has reduced teacher absences for reasons other than staff development." Responses from superintendents in school districts with a student population of less than 1,000 and from districts with more than 2,500 were significantly different (at the .05 level) from the responses of superintendents from districts with a student population between 1,000 and 2,500.

The results utilizing the Duncan procedure showed significant differences on responses to survey item 35, which states, "Due to Phase III, teachers are more involved in shared decision-making." Responses from superintendents from districts with less than 1,000 students were significantly different (at the .05 level) from responses from superintendents from districts with more than 2,500 students.

Data analysis showed no other significant differences in responses to the survey questions used for Hypothesis 3 that would indicate differences in perceptions of superintendents from school districts of different sizes regarding the effects of Phase III. These analyses fail to reject Null Hypothesis 3.

Null Hypothesis 4

A one-way analysis of variance (ANOVA) according to reported Phase III plan categories was utilized to test null hypothesis 4. The three categories involved in the analysis included Phase III plans with only performance-based pay, Phase III plans with only supplemental pay, and Phase III plans with a combination of performance-based pay and supplemental pay. Frequency analysis showed 59 districts with only supplemental pay, 105 districts with a

combination of performance-based and supplemental pay, but only five districts with only performance-based pay. The data analysis showed only two survey items with F probability scores at the predetermined level of significance.

Table 19

Means of Superintendent Responses to the Two Survey Questions that Showed a Significant Difference in Responses by Reported Category of School District Phase III Plan at the .05 Level of Significance

Question	Phase III Plan	N	Mean	F Probability
Tchrs exposed to more innovation	Perf-Based only	5	4.200	
	Supplemental only	59	4.525	
	Combination	105	4.228	
Total		169	4.331	**0.0101**
Tchrs attend more prof dev	Perf-Based only	5	4.400	
	Supplemental only	59	4.466	
	Combination	105	4.544	
Total		169	4,544	**0.0484**

The results utilizing the Duncan procedure indicated significant differences on responses to survey Item 2, which states, "Phase III has exposed teachers to new educational innovations and teaching techniques." Superintendents from districts with Phase III plans that included only supplemental pay reported a significantly higher level of agreement (at the .05 level) with the statement than did

superintendents from districts with Phase III plans that included a combination of performance-based pay and supplemental pay.

Utilization of the Duncan procedure to test for differences showed significant differences on responses to survey Item 1, which states, "Phase III has enabled teachers to attend or participate in more professional development activities." Superintendents from districts with Phase III plans that included only supplemental pay reported a significantly higher level of agreement (at the .05 level) with the statement than did superintendents from districts with Phase III plans that included a combination of performance-based pay and supplemental pay.

Data analysis showed no other significant differences in responses to the other 41 survey questions. That would indicate that superintendents from districts having Phase III pay plans that include only performance-based pay, only supplemental pay, or a combination of performance-based and supplemental pay did not have significantly different perceptions of the effects of Phase III. These analyses fail to reject Null Hypothesis 4.

CHAPTER 5

Summary, Conclusions, and Recommendations for Further Study

The purpose of this study is to identify Iowa public school superintendents' perceptions of the effects of Phase III plans and, specifically, whether they perceive that Phase III funding in the state of Iowa has resulted in positive effects upon education. The study was also designed to determine if there were generally agreed upon perceptions of superintendents regarding the effects of performance-based pay as part of Phase III plans.

Summary of the Findings

According to the Iowa Department of Education (1987), the purpose of the Phase III program is to enhance the performance and effectiveness of Iowa teachers. The findings of this study revealed that Iowa public school superintendents perceived that Phase III plans have had a positive effect upon education. Superintendents reported the greatest positive effect has occurred in the areas of professional development, school/district development, decision-making, and instruction. The results on teaching performance and communication were lower, but still above the median rating. The least positive effect was reported for student performance, where the mean score fell slightly below the median rating. These findings agreed with the findings of the 1992 study of Phase III that was conducted by the North Central Regional Educational Laboratory (NCREL) where teachers believed that Phase III resulted in improved

teaching performance, professional development opportunities, decision-making, communication, and instruction. Teacher perceptions in the NCREL study, however, differed from the superintendent perceptions in this study in the area of student performance. NCREL found that teachers perceived that Phase III had resulted in improved student performance, interest, and motivation. According to the results of this study, superintendents were undecided or were less positive about the effect Phase III on student performance.

The findings of this study also revealed that superintendents did not believe that Phase III plans that contain performance-based pay have any greater effect upon teacher performance than plans without performance-based pay. This finding concurs with the findings of several authorities that monetary rewards are not the primary performance motivators for teachers (Cresap et al., 1984; Gress et al., 1986; Johnson, 1984; Jung, 1984; and Rosenholtz, 1986). Others, such as Spady and Marx (1984), the National Commission on Excellence in Education (1984), and Luck (1988) report that performance-based pay does improve teacher performance.

The findings also showed no differences in perceptions of superintendents from small, medium, and large Iowa school districts regarding the effects of Phase III plans. Historically, Murnane and Cohen (1986) reported that schools with successful, long-term, performance-based pay programs were all small homogeneous districts that were located in advantaged communities. They could find no urban districts with lasting performance-based pay plans and could not document a single large district that had used

performance-based pay to improve teacher performance. Based upon their findings, superintendent perceptions might be expected to differ according to district size. That was not the case in this study.

This study also examined possible differences in perceptions of superintendents from schools with different types of Phase III plans. The findings showed no differences in the perceptions of superintendents from districts having Phase III plans that include only performance-based pay, only supplemental pay, or a combination of performance-based and supplemental pay regarding the effects of Phase III.

Conclusions

Iowa superintendents generally perceived that Phase III plans have had a positive effect upon education. When the different areas measured by the survey were examined, staff development, school/district development, and decision-making were perceived by the superintendents as being the areas most improved by Phase III plans. It was noted that the mean for the item that reflected teachers' increased involvement in decision-making was 3.580, with 65 percent of the responses in the *Strongly Agree* and *Agree* ratings, which appeared to indicate that superintendents believed that Phase III has had a very positive affect in this area. Superintendent responses to the survey item that dealt with whether teachers' decision-making skills have improved reflected a mean of 3.241, with 87.9 percent of the responses in the *Agree* to *Disagree* range. An examination of these results appeared to indicate that superintendents believed that Phase III has resulted in teachers

being more involved in the decision-making process, without an improvement in the teachers' decision-making skills. The survey responses in the areas of instruction, teaching performance, and communication, while still above the median rating, indicated that superintendents believe these have received slightly less positive impact from Phase III plans. It should be noted, however, that survey items dealing with direct student instruction were rated more positively than the other questions in those areas. The survey area regarding student performance reported a group mean that was slightly below the median rating, however, the majority of the superintendent responses in that area were in the undecided rating. Superintendents perceived that the effects of Phase III upon instruction and teaching performance have been more positive than the effects of Phase III upon student performance.

The study found no basic differences between perceptions of superintendents from small, medium, and large Iowa school districts regarding the effects of Phase III plans. This was somewhat surprising since, because of organizational structure related to district size, superintendents in larger districts are more removed from the instructional staff that is primarily affected by Phase III funding than superintendents in smaller school districts.

During a time when the public and the business community are proponents of performance-based pay to improve the quality of education in our schools, superintendents did not believe that Phase III plans that contain performance-based pay are any more effective in improving education than plans that do not contain

performance-based pay. The cooperative and cumulative work efforts required in schools may be different enough from the work of the business world that comparisons between the two may not be valid. Iowa school superintendents generally perceive that Phase III funding has had a positive effect upon education and school improvement in Iowa.

Recommendations for Further Study

Based upon the findings of this study, recommendations for further study can be made in several areas.

The superintendent perceptions that were examined in this study provided only one measure of the effects of Phase III plans. Since they are perceptions, they represent opinions and may not be accurate. They, also, may not be based upon fact, regardless of what legislation says about superintendents being responsible for monitoring the programs in their districts. However, the superintendent does have more potential to influence school district decision-making than any other position in the district. One could conclude that superintendents' perceptions regarding Phase III would affect the development and implementation of Phase III plans in their districts. Future research might prove useful in studying the possible effects of superintendents' perceptions of Phase III upon Phase III programs in their school districts. The question of whether superintendents' perceptions do effect the development and implementation of local Phase III plans could be addressed.

The variations between the perceptions of principals, teachers, board members, parents, and other groups regarding the effects of Phase III would provide additional needed information regarding Phase III and other incentive plans. How the perceptions of these groups differ from the perceptions of superintendents may also provide additional information. For example, teachers may primarily see Phase III as a way to increase their income, while the public may view it as more staff development days with less school.

Superintendents differ in the amount of involvement they have with their districts' Phase III programs. A qualitative study could be conducted to examine what information, involvement, and theories superintendents used in developing their perceptions of the effects of Phase III. Also, district evaluation techniques and programs for Phase III could be examined to see if the evaluations themselves shaped superintendent perceptions.

A more specific study of performance-based pay, as opposed to supplemental pay, seems indicated in evaluating incentive programs. The effects of different kinds of performance-based pay, supplemental pay, or a combination of performance-based could be examined to see if, and how, they have impacted teacher performance.

Superintendents perceived a positive effect on teacher performance. One could ask whether these perceived improvements show up on formal teacher evaluations. A pre-post examination of evaluations of Phase III teachers might provide additional substantive information. Also, teachers' perceptions of their own performance could be examined to see if teachers believe that Phase

III has resulted in an improvement of their teaching skills and performance.

A comparison of performance-based pay and incentive pay in Iowa schools and Iowa businesses might be conducted to see what similarities and differences exist in the pay plans and the results of the pay plans. Can the cumulative and cooperative nature of the work of education be adequately considered to permit effective performance-based pay in the same format that the business world and the public view performance-based pay?

The effects of teacher inservice and staff development opportunities might also be studied to examine their possible relationships with Phase III and the areas measured by this study. Is there a relationship between current staff development opportunities and trends and the perceptions of superintendents regarding Phase III?

This study found that superintendents are not as positive or, at least, undecided as to the effects of Phase III on student performance. This area merits further study. Why did superintendents' perceptions indicate that they did not believe that student performance had been positively affected by Phase III plans? Also, do incentive and performance-based pay plans have a direct and/or a cause and effect relationship with student performance or no relationship at all?

The entire area of incentive and performance-based pay plans in education have been the subject of much controversy and diversities of opinion (Duttweiler, 1986; Johnson, 1986). Given the amount of money and interest involved in Phase III, a great deal

more research needs to be conducted on Phase III and similar incentive programs to guide professional, public, and legislative opinion.

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Appendix

Appendix A

Data from ANOVA According to Reported District Size

	District Size	N	Mean	S.D.	F ratio	F Prob
Staff Development						
Tchrs attend more prof dev	<1000	123	4.528	0.5772		
	1000-2500	38	4.526	0.6467		
	>2500	14	4.714	0.4688		
Total		175	4.542	0.5844	0.6523	0.5222
Tchrs exposed to innovation	<1000	123	4.341	0.6118		
	1000-2500	38	4.289	0.6538		
	>2500	14	4.357	0.4972		
Total		175	4.331	0.6101	0.1177	0.889
Opportunity to share	<1000	123	3.804	0.8363		
	1000-2500	38	3.736	0.9208		
	>2500	14	3.785	1.251		
Total		175	3.788	0.8879	0.0844	0.9191
Opportunity to coach	<1000	123	3.52	0.9085		
	1000-2500	38	3.473	1.2022		
	>2500	14	3.357	1.4469		
Total		175	3.497	1.022	0.1714	0.8427
Instruction						
Imp diagnosis/learning prob	<1000	123	3.292	0.9472		
	1000-2500	38	3.157	1.078		
	>2500	14	3.071	0.8287		
Total		175	3.245	0.9662	0.5272	0.5912
Improved planning skills	<1000	123	3.487	0.8432		
	1000-2500	38	3.394	1.079		
	>2500	14	3.357	0.2695		
Total		175	3.457	0.9079	0.2427	0.7848
Effective infusion of 7 areas	<1000	123	3.414	1.0934		
	1000-2500	38	3.052	1.2509		
	>2500	14	3.285	0.9139		
Total		175	3.325	1.1204	1.5343	0.2185

Teaching Performance						
Apply innovation in class	<1000	122	4.008	0.9492		
	1000-2500	38	4.052	1.0892		
	>2500	14	4	0.6794		
Total		174	4.017	0.7639	0.0523	0.949
Improved tchr performance	<1000	122	3.434	0.909		
	1000-2500	38	3.473	1.563		
	>2500	14	3.357	0.8419		
Total		174	3.436	0.9581	0.0761	0.9268
Skill remed learning prob	<1000	122	3.368	0.8926		
	1000-2500	38	3.289	1.0631		
	>2500	14	3.285	0.8254		
Total		174	3.344	0.9228	0.1371	0.872
Handle behavior problems	<1000	122	2.983	0.8906		
	1000-2500	38	2.815	1.1355		
	>2500	14	3.214	0.8926		
Total		174	2.965	0.949	0.9759	0.3789
Work with student diversity	<1000	122	2.885	0.7065		
	1000-2500	38	2.71	1.011		
	>2500	14	2.714	0.8254		
Total		174	2.833	0.7907	0.8787	0.4172
Imp questioning skills	<1000	122	3.385	0.8176		
	1000-2500	38	3.5	1.1089		
	>2500	14	3.285	0.9139		
Total		174	3.402	0.8926	0.3666	0.6936
Out of classroom too much	<1000	122	2.942	1.0389		
	1000-2500	38	2.921	1.2602		
	>2500	14	3.142	1.0271		
Total		174	2.954	1.0849	0.2342	0.7914
Reduced teacher absences	<1000	121	2.206	0.6942		
	1000-2500	38	1.921	0.8505		
	>2500	14	2.5	1.109		
Total		173	2.167	0.7706	3.5013	0.0324

Perf-base more impact	<1000	122	2.623	1.1158		
	1000-2500	38	2.5	1.33		
	>2500	14	3.357	1.008		
Total		174	2.655	1.1712	2.9598	0.0545
Tchr assessment/student perf	<1000	121	3.289	0.831		
	1000-2500	38	3.263	1.0574		
	>2500	14	3.428	1.0763		
Total		173	3.294	0.8956	0.1805	0.835
Student Performance						
Student self-esteem	<1000	122	2.901	0.8758		
	1000-2500	38	2.736	1.005		
	>2500	14	2.928	0.73		
Total		174	2.867	0.893	0.5257	0.5921
Student esteem for others	<1000	122	2.786	0.7949		
	1000-2500	38	2.71	0.9839		
	>2500	14	2.928	0.73		
Total		174	2.781	0.8318	0.357	0.7003
Student ach/standardized test	<1000	122	2.827	0.7463		
	1000-2500	38	2.71	0.956		
	>2500	14	2.857	0.663		
Total		174	2.804	0.7878	0.3527	0.7033
Student ach/other test	<1000	122	3.106	0.8112		
	1000-2500	38	3.026	1.1025		
	>2500	14	3	0.6794		
Total		174	3.08	0.8698	0.1867	0.8299
Reading skills improved	<1000	122	3.008	0.7551		
	1000-2500	38	2.815	0.9824		
	>2500	14	3	0.6794		
Total		174	2.965	0.8039	0.8424	0.4324
Math skills improved	<1000	122	3.106	0.78		
	1000-2500	38	2.789	0.78		
	>2500	14	3	0.6794		
Total		174	3.028	0.8289	2.1578	0.1187

Study skills improved	<1000	122	3.082	0.8191		
	1000-2500	38	2.9474	1.0641		
	>2500	14	2.857	0.663		
Total		174	3.034	0.8662	0.6664	0.5149
Student discipline improved	<1000	122	2.713	0.7327		
	1000-2500	38	2.578	0.9762		
	>2500	14	2.857	0.7703		
Total		174	2.654	0.7932	0.7287	0.4841
Students in the fine arts	<1000	122	2.606	0.7107		
	1000-2500	38	2.736	0.9208		
	>2500	14	2.857	0.663		
Total		174	2.655	0.7577	0.969	0.3815
Student time-on-task	<1000	122	2.959	0.8171		
	1000-2500	38	2.921	1.0751		
	>2500	14	2.928	0.6157		
Total		174	2.948	0.862	0.0317	0.9688
Student attendance improved	<1000	122	2.557	0.7502		
	1000-2500	38	2.526	0.8925		
	>2500	14	2.928	0.8287		
Total		174	2.58	0.7915	1.5036	0.2252
School/District Develop						
Better curriculum	<1000	120	3.941	0.8431		
	1000-2500	38	3.973	0.8216		
	>2500	14	3.785	0.6993		
Total		172	3.936	0.8247	0.2726	0.7617
More clearly defined mission	<1000	120	3.525	0.9611		
	1000-2500	38	3.657	1.2363		
	>2500	14	3.214	0.8018		
Total		172	3.529	1.017	0.9762	0.3788

O.B.E. emphasized		<1000	120	2.983	1.0451		
		1000-2500	38	3.105	1.1576		
		>2500	14	3	0.9608		
	Total		172	3.011	1.0596	0.1902	0.827
Transformation awareness		<1000	120	3.683	0.9073		
		1000-2500	38	3.815	1.0617		
		>2500	14	3.857	0.9493		
	Total		172	3.726	0.9433	0.4273	0.653
Transformation started		<1000	120	3.525	1.0039		
		1000-2500	38	3.657	1.1689		
		>2500	14	3.5	1.0919		
	Total		172	3.552	1.0444	0.2505	0.7787
Tchr awareness of mission		<1000	120	3.591	0.8044		
		1000-2500	38	3.631	1.0506		
		>2500	14	3.642	0.9288		
	Total		172	3.604	0.8689	0.0447	0.9563
Decision-Making							
Teachers more involved		<1000	120	3.491	0.9614		
		1000-2500	38	3.631	1.1951		
		>2500	14	4.214	0.8018		
	Total		172	3.581	1.0199	3.2921	0.0396
Decision-making skills imp		<1000	120	3.2	0.9222		
		1000-2500	38	3.21	1.2116		
		>2500	14	3.714	1.069		
	Total		172	3.244	1.008	1.672	0.191
Communication							
Teacher/parent		<1000	119	3.067	0.851		
		1000-2500	38	3.105	1.0343		
		>2500	14	3.357	0.9288		
	Total		171	3.099	0.8987	0.6501	0.5233

Teacher/student	<1000	120	3.266	0.8671		
	1000-2500	38	3.105	1.0601		
	>2500	14	2.857	0.663		
Total		172	3.197	0.9025	1.5565	0.2139
Teacher/administrator	<1000	120	3.45	0.8874		
	1000-2500	38	3.447	1.2455		
	>2500	14	3.642	1.2157		
Total		172	3.465	0.9994	0.239	0.7877
Improved public relations	<1000	120	3.041	0.883		
	1000-2500	38	2.657	1.0469		
	>2500	14	2.785	0.8018		
Total		172	2.936	0.925	2.7402	0.0674
Diverse cultural backgrounds	<1000	120	2.733	0.7187		
	1000-2500	38	2.578	0.9192		
	>2500	14	2.642	0.7449		
Total		172	2.691	0.7673	0.6125	0.5432
Professional relationships	<1000	120	3.225	0.939		
	1000-2500	38	3.131	1.2557		
	>2500	14	3.285	1.1387		
Total		172	3.209	1.0273	0.1899	0.8524
Delegation of responsibility	<1000	120	3.375	0.8799		
	1000-2500	38	3.263	1.1783		
	>2500	14	3.857	0.663		
Total		172	3.389	0.9456	2.0917	0.1267

Appendix B

Data from ANOVA According to Reported Phase III Category

	Phase III Plan	N	Mean	S.D.	F Ratio	F Prob
Staff Development						
Tchrs attend more prof dev	Perf-Based Pay	5	4.4	0.5477		
	Supplemental Pay	59	4.694	0.4644		
	Combination	105	4.466	0.6365		
Total		169	4.544	0.5871	3.0847	0.0484
Tchrs exposed to innovation	Perf-Based Pay	5	4.2	0.4472		
	Supplemental Pay	59	4.525	0.5368		
	Combination	105	4.228	0.6369		
Total		169	4.331	0.6145	4.7257	0.0101
Opportunity to share	Perf-Based Pay	5	3.6	0.8944		
	Supplemental Pay	59	3.949	0.8793		
	Combination	105	3.676	0.8933		
Total		169	3.769	0.8931	1.8762	0.1564
Opportunity to coach	Perf-Based Pay	5	3.4	1.1402		
	Supplemental Pay	59	3.542	1.0557		
	Combination	105	3.447	1.0094		
Total		169	3.479	1.024	0.1754	0.8393
Instruction						
Imp diagnosis/learning prob	Perf-Based Pay	5	3.4	0.5477		
	Supplemental Pay	59	3.271	1.0311		
	Combination	105	3.209	0.9271		
Total		169	3.236	0.9529	0.1532	0.8581
Improved planning skills	Perf-Based Pay	5	3.8	0.8367		
	Supplemental Pay	59	3.456	1.0393		
	Combination	105	3.428	0.8304		
Total		169	3.449	0.9057	0.4019	0.6697
Effective infusion of 7 areas	Perf-Based Pay	5	3.4	0.8944		
	Supplemental Pay	59	3.44	1.1488		
	Combination	105	3.257	1.1009		
Total		169	3.325	1.1103	0.5247	0.5927

Teaching Performance

Apply innovation in class	Perf-Based Pay	5	3.8	0.4472		
	Supplemental Pay	59	4.016	0.8406		
	Combination	104	4.009	0.7307		
Total		168	4.006	0.7621	0.1881	0.8287
Improved tchr performance	Perf-Based Pay	5	3.6	0.8944		
	Supplemental Pay	59	3.423	1.0035		
	Combination	104	3.403	0.9401		
Total		168	3.416	0.9566	0.1017	0.9034
Skill remed learning prob	Perf-Based Pay	5	3.8	0.8367		
	Supplemental Pay	59	3.406	0.949		
	Combination	104	3.269	0.9055		
Total		168	3.333	0.9199	1.0849	0.3403
Handle behavior problems	Perf-Based Pay	5	3	0.7071		
	Supplemental Pay	59	3.033	1.0333		
	Combination	104	2.942	0.9119		
Total		168	2.976	0.9474	0.1758	0.839
Work with student diversity	Perf-Based Pay	5	3	0.7071		
	Supplemental Pay	59	2.898	0.8448		
	Combination	104	2.778	0.7627		
Total		168	2.827	0.7891	0.5517	0.5771
Imp questioning skills	Perf-Based Pay	5	3.8	0.4472		
	Supplemental Pay	59	3.406	0.9847		
	Combination	104	3.346	0.8676		
Total		168	3.381	0.9012	0.6396	0.5288
Out of classroom too much	Perf-Based Pay	5	3	0.7071		
	Supplemental Pay	59	2.881	1.1308		
	Combination	104	3	1.088		
Total		168	2.958	1.0908	0.2243	0.7993

Reduced teacher absences	Perf-Based Pay	5	2.4	0.5477		
	Supplemental Pay	58	2.275	0.9137		
	Combination	104	2.086	0.6699		
Total		167	2.161	0.763	1.4046	0.2484
Perf-base more impact	Perf-Based Pay	5	3.4	0.8944		
	Supplemental Pay	59	2.559	1.2073		
	Combination	104	2.663	1.1542		
Total		168	2.648	1.1692	1.2162	0.299
Tchr assessment/student perf	Perf-Based Pay	5	3.8	0.8367		
	Supplemental Pay	59	3.305	0.876		
	Combination	103	3.223	0.9068		
Total		167	3.269	0.8947	1.0638	0.3475
Student Performance	Perf-Based Pay	5	3.2	0.4472		
Student self-esteem	Supplemental Pay	59	2.949	0.99		
	Combination	104	2.807	0.837		
Total		168	2.869	0.8861	0.8375	0.4346
Student esteem for others	Perf-Based Pay	5	3	0.7071		
	Supplemental Pay	59	2.847	0.925		
	Combination	104	2.73	0.7662		
Total		168	2.779	0.822	0.5612	0.5716
Student ach/standardized test	Perf-Based Pay	5	3.2	0.4472		
	Supplemental Pay	59	2.728	0.8058		
	Combination	104	2.807	0.7892		
Total		168	2.791	0.788	0.8791	0.4171
Student ach/other test	Perf-Based Pay	5	3.2	0.4472		
	Supplemental Pay	59	3.05	0.9724		
	Combination	104	3.067	0.8391		
Total		168	3.065	0.8391	0.0666	0.9356
Reading skills improved	Perf-Based Pay	5	3	0		
	Supplemental Pay	59	2.983	0.919		
	Combination	104	2.932	0.7666		
Total		168	2.952	0.8102	0.0807	0.9225

Math skills improved		Perf-Based Pay	5	3	0		
		Supplemental Pay	59	2.983	0.9		
		Combination	104	3.028	0.818		
	Total		168	3.011	0.8333	0.0567	0.9449
Study skills improved		Perf-Based Pay	5	3.4	0.5477		
		Supplemental Pay	59	2.949	0.9363		
		Combination	104	3.028	0.8414		
	Total		168	3.011	0.8685	0.6703	0.5129
Student discipline improved		Perf-Based Pay	5	3.2	0.4472		
		Supplemental Pay	59	2.627	0.8886		
		Combination	104	2.673	0.7432		
	Total		168	2.672	0.7929	1.2061	0.302
Students in the fine arts		Perf-Based Pay	5	2.8	0.4472		
		Supplemental Pay	59	2.728	0.8058		
		Combination	104	2.586	0.7583		
	Total		168	2.642	0.7683	0.751	0.4735
Student time-on-task		Perf-Based Pay	5	2.8	0.8367		
		Supplemental Pay	59	2.864	0.8994		
		Combination	104	2.99	0.8533		
	Total		168	2.94	0.8666	0.4625	0.6305
Student attendance improved		Perf-Based Pay	5	2.6	0.5477		
		Supplemental Pay	59	2.542	0.9344		
		Combination	104	2.557	0.7217		
	Total		168	2.553	0.7949	0.0156	0.9845
School/District Develop			**5**				
Better curriculum		Perf-Based Pay	59	3.8	0.4472		
		Supplemental Pay	105	4	0.8305		
		Combination	169	3.885	0.8241		
	Total			3.923	0.8165	0.4256	0.6541
More clearly defined mission		Perf-Based Pay	**5**	3.2	0.8367		
		Supplemental Pay	59	3.593	1.0359		
		Combination	105	3.467	1.0105		
	Total		169	3.508	1.0425	0.4891	0.6141

O.B.E. emphasized		Perf-Based Pay	5	2.6	0.8944		
		Supplemental Pay	59	3.271	1.0477		
		Combination	105	2.876	1.0624		
	Total		169	3.005	1.0662	3.0373	0.0506
Transformation awareness		Perf-Based Pay	5	3.6	1.1402		
		Supplemental Pay	59	3.915	0.8364		
		Combination	105	3.571	0.9792		
	Total		169	3.692	0.9449	2.5726	0.0794
Transformation started		Perf-Based Pay	5	3.2	1.0954		
		Supplemental Pay	59	3.644	1.0299		
		Combination	105	3.457	1.0472		
	Total		169	3.514	1.0414	0.8423	0.4326
Tchr awareness of mission		Perf-Based Pay	5	3.2	0.8367		
		Supplemental Pay	59	3.694	0.8955		
		Combination	105	3.542	0.8663		
	Total		169	3.585	0.8763	1.0689	0.3457
Decision-Making							
Teachers more involved		Perf-Based Pay	5	3.2	1.3038		
		Supplemental Pay	59	3.559	1.1028		
		Combination	105	3.581	0.9686		
	Total		169	3.562	1.0224	0.329	0.7201
Decision-making skills imp		Perf-Based Pay	5	2.8	1.0954		
		Supplemental Pay	59	3.288	1.0348		
		Combination	105	3.219	0.9902		
	Total		169	3.23	1.0059	0.5586	0.5731
Communication							
Teacher/parent		Perf-Based Pay	5	3.2	0.8367		
		Supplemental Pay	59	3	0.9649		
		Combination	104	3.134	0.8709		
	Total		168	3.089	0.9013	0.4558	0.6348
Teacher/student		Perf-Based Pay	5	3	0.7071		
		Supplemental Pay	59	3.101	0.9947		
		Combination	105	3.238	0.8495		
	Total		169	3.183	0.8975	0.5409	0.5832

Teacher/administrator	Perf-Based Pay	5	4.2	0.4472		
	Supplemental Pay	59	3.339	1.044		
	Combination	105	3.447	0.9606		
Total		169	3.432	0.9864	1.8082	0.1672
Improved public relations	Perf-Based Pay	5	2.8	0.4472		
	Supplemental Pay	59	2.966	0.9643		
	Combination	105	2.876	0.9061		
Total		169	2.905	0.9145	0.2147	0.807
Diverse cultural backgrounds	Perf-Based Pay	5	2.6	0.8944		
	Supplemental Pay	59	2.627	0.7856		
	Combination	105	2.723	0.7531		
Total		169	2.686	0.7652	0.3317	0.7182
Professional relationships	Perf-Based Pay	5	3.6	0.5477		
	Supplemental Pay	59	3.254	1.1386		
	Combination	105	3.123	0.9874		
Total		169	3.183	1.0331	0.7174	0.4895
Delegation of responsibility	Perf-Based Pay	5	3.4	0.5477		
	Supplemental Pay	59	3.423	0.8945		
	Combination	105	3.314	0.9837		
Total		169	3.355	0.9408	0.2595	0.772

Appendix C

Pilot Letter

May 17, 1993

_____, Superintendent
_____ Community School District
Address
City, Iowa Zipcode

Dear _____:

Thank you for agreeing to participate in my dissertation survey pilot. As I explained on the phone, as part of my Doctoral research study through Drake University, I am conducting a survey of the perceptions of Iowa school superintendents regarding the general effects of Phase III performance-based and incentive pay plans. Before the survey can be conducted, I must run a pilot study. _____ Community School District was randomly selected for this pilot study.

As the administrative leader of your school district, your perception regarding Phase III and student and teacher performance is a critical component of this study. Administrators who have completed this survey tell us that it took less than ten minutes to complete. I will meet with you at _____a.m. on _____, 1993, to pick up the survey and ask you a few questions about the survey questionnaire and procedures. I appreciate the time you are taking to complete this questionnaire and meet with me. As a way of thanking you for your time, along with the name of each superintendent who completes and returns the questionnaire, your name will be placed in a drawing for a $50 savings bond!

Confidentiality of all individual responses will be strictly maintained.

If you wish to receive a copy of the results of this study, please complete the request that is included with your questionnaire and I will pick it up with your survey. The results will be mailed directly to you.

If you have questions concerning this study, please contact me by phone.

Marvin Dick
Doctoral Candidate
1-515-955-8817

Appendix D

Survey Cover Letter

«DATA Survey addresses
June 1, 1993

«name», Superintendent
«school»
«address»
«city», «state» «zip»

Dear «name»:

As part of my Doctoral research study through Drake University, I am conducting a survey of the perceptions of Iowa school superintendents regarding the general effects of Phase III plans. Your school district was randomly selected for this study.

As the administrative leader of your school district, your perception regarding Phase III plans and student and teacher performance is a critical component of this study. Administrators who have completed this survey tell us that it took less than ten minutes to complete. Would you share ten minutes of your valuable time to complete this questionnaire and return it in the enclosed envelope? As a way of thanking you for your time, each superintendent who completes and returns the questionnaire will have his/her name placed in a drawing for a $50 savings bond!

Confidentiality of all individual responses will be strictly maintained. The surveys are numbered to determine which superintendents have returned the questionnaires and to permit me to send reminders or replacement copies for surveys that have been misplaced. The numbering system will not be used for any other purposes. Confidentiality of your responses is assured.

If you wish to receive a copy of the results of this study, please complete the postcard that is included with your questionnaire and send it to me. The results will be mailed directly to you.

If you have questions concerning this study, please contact us by phone.

Dr. Mike Johnson
Committee Chair
Drake University
1-800-44-DRAKE

Marvin Dick
Doctoral Candidate
1-515-955-8817

Appendix E

Survey Follow-Up Letter

«DATA Survey addresses
July 2, 1993

«name», Superintendent
«school»
«address»
«city», «state» «zip»

Dear «name»:

In June, as part of my Doctoral research study through Drake University, I sent you a survey of the perceptions of Iowa school superintendents regarding the general effects of Phase III plans. I have not yet received a completed survey from you. I have enclosed another copy of the survey, in case the original was lost.

I realize that, as a superintendent, this is a busy time of year for you, but your perception regarding the effects of Phase III is a critical component of this study. Administrators who have completed this survey tell us that it took less than ten minutes to complete. Would you share ten minutes of your valuable time to complete this questionnaire and return it in the enclosed envelope? As a way of thanking you for your time, each superintendent who completes and returns the questionnaire will have his/her name placed in a drawing for a $50 savings bond!

Your school district was randomly selected for this study. Confidentiality of all individual responses will be strictly maintained. The surveys are numbered to determine which superintendents have returned the questionnaires and to permit me to send reminders or replacement copies for surveys that have been misplaced. The numbering system will not be used for any other purposes. Confidentiality of your responses is assured.

If you wish to receive a copy of the results of this study, please complete the postcard that is included with your questionnaire and send it to me. The results will be mailed directly to you.

If you have questions concerning this study, please contact us by phone.

Dr. Mike Johnson
Committee Chair
Drake University
1-800-44-DRAKE

Marvin Dick
Doctoral Candidate
1-515-576-6047

Appendix F

Pilot Survey Interview Schedule

MAY 26

7:15-8:00	_____ Community School District
8:00-9:00	Drive (30 miles)
9:00-9:45	_____Community School District
9:45-12:00	Drive (100 miles)
12:00-1:30	_____Community School District
1:30-5:15	Drive (170 miles)

MAY 27

7:45-8:30	_____Community School District
8:30-11:00	Drive (100 miles)
11:00-11:45	_____Community School District

MAY 28

8:00-8:30	_____Community School District

Appendix G

Superintendent Perceptions of Phase III Survey

Please return the completed survey in the enclosed envelope to:

Marvin Dick
1217 26th Ave. N.
Fort Dodge, IA 50501

Please circle the response for each statement that most clearly reflects your agreement or disagreement with the statement.

SA Strongly Agree
A Agree
N Undecided
D Disagree
SD Strongly Disagree

For this study, the following definitions are used:

Performance-based pay: A salary increase for teachers who demonstrate superior performance in completing assigned duties, as approved in Phase III plans. Examples: Rating systems, career ladders, point systems, individual teacher goals, group teacher goals, and site goals.

Supplemental pay: Additional salary, as approved in Phase III plans, for teachers who participate in either additional instructional work assignments or specialized training during the regular school day or during an extended school day, school week, or school year.

Staff Development

Phase III has:

SA A N D SD 1. enabled teachers to attend or participate in more professional development activities.

SA A N D SD 2. exposed teachers to new educational innovations and teaching techniques.

SA A N D SD 3. provided teachers the opportunity to share their new learning with others.

SA A N D SD 4. provided skilled teachers the opportunity to coach other teachers to help improve instruction.

Instruction

Phase III has:

SA A N D SD 5. resulted in improved teacher diagnosis of student learning problems.

SA A N D SD 6. resulted in improved teacher planning skills.

SA A N D SD 7. assisted teachers in more effectively infusing the seven areas mandated by state standards into daily instruction (career education, communication skills education, global education, learning skills education, multicultural/nonsexist education, technology education, and thinking skills education).

Teaching Performance

Phase III has:

SA A N D SD 8. assisted teachers in applying new or innovative teaching techniques in classroom instruction.

SA A N D SD 9. improved teacher performance.

SA A N D SD 10. improved teacher skills in remediation of student learning problems.

SA A N D SD 11. assisted teacher handling of student behavior problems.

SA A N D SD 12. improved teachers' abilities to work with students from diverse cultural backgrounds.

SA A N D SD 13. improved teachers' questioning skills.

SA A N D SD 14. permitted teachers to be out of the classroom too much.

SA A N D SD 15. reduced teacher absences for reasons other than staff development.

SA A N D SD 16. Phase III plans that contain performance-based pay have more impact upon teacher performance than Phase III plans that contain only supplemental pay.

SA A N D SD 17. improved teacher assessment of student performance.

Student Performance

Due to Phase III efforts:

SA A N D SD 18. student self-esteem has improved.

SA A N D SD 19. student esteem for others has improved.

SA A N D SD 20. student achievement on standardized tests has improved.

SA A N D SD 21. student achievement in areas not measured by standardized tests has improved.

SA A N D SD 22. student reading skills have improved.

SA A N D SD 23. student math skills have improved.

SA A N D SD 24. student study skills have improved.

SA A N D SD 25. student discipline has improved.

SA A N D SD 26. student involvement in the fine arts has improved.

SA A N D SD 27. student time-on-task has increased.

SA A N D SD 28. student attendance has improved.

School/District Development

Phase III has:

SA A N D SD 29. resulted in the development of a curriculum that better meets student needs.

SA A N D SD 30. resulted in the mission of the school being more clearly defined.

SA A N D SD 31. resulted in O.B.E. (outcomes based education) being emphasized.

SA A N D SD 32. resulted in increased teacher awareness of school restructuring/transformation.

SA A N D SD 33. assisted in starting school restructuring/transformational activities in my district.

SA A N D SD 34. made teachers more aware of the educational mission of the school.

Decision-Making

Due to Phase III:

SA A N D SD 35. teachers are more involved in shared decision-making.

SA A N D SD 36. teacher decision-making skills have improved.

Communication

Phase III has:

SA A N D SD 37. resulted in improved teacher/parent communication.

SA A N D SD 38. resulted in improved teacher/student communication.

SA A N D SD 39. resulted in improved teacher/administrator communication.

SA A N D SD 40. resulted in improved public relations.

SA A N D SD 41. improved teachers' abilities to work with parents from diverse cultural backgrounds.

SA A N D SD 42. resulted in improved professional relationships between teachers and administrators.

SA A N D SD 43. resulted in increased delegation of responsibility and authority to teachers.

Other

44. Please mark the categories included in your district's Phase III plan.

_____Performance-based pay

_____Supplemental pay

_____Combination of performance-based pay and supplemental pay

_____Comprehensive school transformation

45. Please indicate the size of your school district.

_____Less than 1000 students

_____Between 1000 students and 2500 students

_____More than 2500 students

46. Please provide the following information regarding your experience:

_____Years in current position

_____Total years as a superintendent

Experience as an elementary principal with Phase III monies	___Yes	___No
Experience as an elementary principal without Phase III monies	___Yes	___No
Experience as a middle school principal with Phase III monies	___Yes	___No
Experience as a middle school principal without Phase III monies	___Yes	___No
Experience as a secondary principal with Phase III monies	___Yes	___No
Experience as a secondary principal without Phase III monies	___Yes	___No

47. Please provide the following personal data:

_____Age _____Male _____Female

Data collected and analyzed in this study will not be used to identify any individual or school district. Responses will be kept confidential and the anonymity of respondents and collected data will be preserved.

Thank you for your assistance with this project. If you wish to receive a summary of the results of this study, please complete and return the enclosed postcard.